DOCUMENT RESUME

ED 073 483 CS 200 416

AUTHOR	O'Hare, Frank
TITLE	Sentence Combining: Improving Student Writing without Formal Grammar Instruction. NCTE Committee on Research Report Series. No. 15.
INSTITUTION	National Council of Teachers of English, Urbana, Ill.
PUB DATE	73
NOTE	115p.
AVAILABLE FROM	National Council of Teachers of English, 1111 Kenyon Road, Urbana, Ill. 61801 (Stock No. 15959, $2.50 non-member, $2.25 member)
EDRS PRICE	MF-$0.65 HC-$6.58
DESCRIPTORS	*Composition (Literary); English; *Grade 7; Grammar; Sentence Structure; *Syntax; *Teaching Methods; *Transformation Generative Grammar; Writing

ABSTRACT

The purpose of this study was to develop a sentence-combining system for teaching composition to seventh grade students. The exercises were designed so as to be independent of the students' previous knowledge of grammar. Chapter 1 examines recent studies in language and writing. The first part of chapter 2 demonstrates that normal growth in syntactic maturity can be measured in quantifiable terms. The second part of the chapter describes and suggests a rationale for sentence-combining practice. Chapter 3 discusses the design and procedures of the study. The results of the study, discussed in chapter 4, indicate that the students practicing sentence-combining achieved a significant degree of syntactic maturity, and their compositions were judged to be significantly better in quality than those written by students who did not have such practice. The conclusions and implications of the study are discussed in chapter 5: the fact that seventh graders' writing can be improved within eight months suggests that sentence-combining practice could be a valuable contribution to a composition program. Appendixes provide sample lessons and exercises as well as composition evaluation assignments. (Author/DI)

*no. 15 in a series of research reports sponsored by the NCTE Committee on Research

ED 073483

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Sentence *Combining:

*Improving Student Writing without Formal Grammar Instruction

By Frank O'Hare
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STAFF EDITOR: Duncan Streeter. STAFF DESIGNER: Norma Phillips Meyers.

Library of Congress Catalog Card Number: 72-95432.
ISBN: 0-8141-1595-9.
NCTE Stock Number: 15959.

Copyright © 1971 by Frank O'Hare under the title, "The Effect of Sentence-Combining Practice Not Dependent on Formal Knowledge of a Grammar on the Writing of Seventh Graders" (dissertation).

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National Council of Teachers of English

Research Report No. 15

Literacy, or the lack of literate skills, overshadows and outweighs every other problem and need sensed by educators and clients of the schools. The broad base of opinion to this effect is reflected in the highest priorities of current educational legislation and planning. For this reason, I was particularly interested to learn, prior to reading the manuscript for this book, that Frank O'Hare's work involved an instructional technique for use in teaching *writing* that was at least potentially capable of yielding results that would profoundly alter the current instructional practices of the writing curriculum. My reading of O'Hare's manuscript confirmed this description.

The instructional approach in the O'Hare study is called *sentence-combining*, a type of pedagogy involving extensive, sequenced practice of specially formulated print-based exercises through which a student is said to acquire dexterity in writing complex sentence structures. On its face, the sentence-combining technique has a solid foundation in research. The main ideas, though original in configuration, are supported by the work of several leading linguists and, indirectly, by the work of many behavioral scientists over a period of decades. One of the crucial *linguistic* notions here is that written English is a dialect distinct from spoken English, from which it would appear to follow that an effective pedagogy should be based upon language-learning techniques. Another notion is that the linguistic mechanisms of sentence generation are extremely dynamic, from which follows the possibility, indeed the actuality in the sentence-combining method, of devising learning activities in which the linguistic processes of sentence generation can be simulated by the student. The basic *psychological* ingredient has to do with an apparent fact about learning whereby complex skills are most readily learned when they are broken down into smaller component subskills, as when in the sentence-combining method a student matures in his linguistic ability in written English through a succession of quasi-generative learning experiences in sentence building. The methodology appears to have application as an instructional strategy at many levels of training in writing, from the elementary grades on.

O'Hare's contribution has been to identify the practice of sentence-combining as the probable cause of the positive effects that have been observed in a series of experiments in which sentence-combining activities were present, but not the exclusive elements of the treatment. For historical reasons, the sentence-combining technique arose within the context of a debate on the relevance of formal grammar instruction (in this instance, transformational grammar) to the acquisition of measurable writing skills. The force of O'Hare's work, which reports impressive positive effects for the exclusive use of sentence-combining, is to render the entire issue academic, at least with respect to the short-term goal of finding curricular and instructional solutions to the problem of illiteracy in writing.

One should bear in mind that O'Hare's experiment does not have laboratory characteristics, and although O'Hare himself is highly qualified by experience and training, the test data cannot be taken as conclusive proof, nor can they be fairly interpreted without reservations. Still, O'Hare has provided the first major test of sentence-combining methodology in a relatively pure form and, while important questions remain to be answered, I can think of no line of research in the area of writing that holds greater promise for effective curricular change than further exploration of sentence-combining as a pedagogy.

Peter S. Rosenbaum
For the Committee on Research

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ACKNOWLEDGMENTS

I wish to thank the members of my dissertation committee, John Simmons, chairman, Roy O'Donnell, Garrett Foster, and James Preu, for the helpful advice they gave me during my work on this study. My special thanks to Roy O'Donnell and Kellogg Hunt for their assistance with the problems that arose in connection with the grammatical analysis of the data; to Gerald vanBelle for his creative work with the statistical analysis of the data, especially the instruments he devised to assess overall writing quality; to James Barnes, who so ably taught two of the classes in the experiment; and to the eight experienced English teachers who judged the quality of the student writing.

John Mellon of Harvard University generously allowed me to use and adapt many of the sentence-combining exercises from his text *Our Sentences and Their Grammar*. For this I am truly grateful.

I also wish to thank Thomas Devine and Peter Rosenbaum of the NCTE Committee on Research and James McCrimmon of Florida State University, who helped me revise this manuscript.

Tallahassee, Florida F. O'H.

INTRODUCTION

Despite Marshall McLuhan's timely warning to society in general and to educators in particular that we are at the end of the Gutenberg era, the age of writing and of printed materials, and that the electronic "nonwriting" age is upon us, educators remain convinced of the importance of writing as a humane, perhaps the most humane, skill developed by man. Written records have enabled man to pass down through the centuries his discoveries, his frustrations, and his aspirations. The eloquence of Cicero, the simplicity of the Sermon on the Mount, the wisdom of the Bhagavad Gita, all would be lost to us had we not devised the means to put them on paper.

The English-speaking community has given English teachers the responsibility of teaching people writing, the putting-words-down-on-paper skill. And English teachers who have been writing for a very long time have come up with a bewildering variety of "right" ways to teach writing. There are almost as many theories as there are theoreticians. Even more perplexing, although many of these theories make good sense, each in turn has been, if not refuted, at least called to question by contradictory evidence. After an exhaustive study of writing research Braddock (1963) concluded that

> Today's research in composition, taken as a whole, may be compared to chemical research as it emerged from the period of alchemy: some terms are being defined usefully, a number of procedures are being refined, but the field as a whole is laced with dreams, prejudices and makeshift operations. (p. 5)

At least since Aristotle the search has been on for an all-embracing theory of rhetoric or composition or plain writing. This metatheory would assign to their proper places and in their proper degrees such components of writing as ideas, organization, style, voice, tone, vocabulary; it would reconcile differences, confirm similarities, answer all our questions. Despite the fact that some impressive attempts have been made in recent times to formulate such a theory—for example, the works of I. A. Richards and Kenneth Burke—no completely satisfactory metatheory has appeared: opposites remain unreconciled, doubts unresolved.

Teachers of writing, however, are less interested in composition theory than in the practical implications of any given theory. Confronted daily with the task of improving student writing, these teachers cannot afford to wait until a satisfactory metatheory emerges from research. For them the crucial question is always a practical one: Will it make my students better writers?

The present study is not designed to test any proposed metatheory of composition. It has its eye, rather, on composition students in the English classroom, and, as a consequence, its aims are much more limited, much more specific. Interested in the possibilities of altering and improving students' writing behavior, this study seeks answers to the following questions:

1. Would seventh graders who practiced a new kind of sentence-combining exercise that was in no way dependent on their formal knowledge of a grammar write compositions that could be described as syntactically different from those written by students quite similar to them in ability who were not exposed to such sentence-combining practice?
2. If there were syntactic differences in their writing, could these differences be called differences in maturity?
3. Would the students who practiced the sentence combining write compositions that would be judged better in overall quality?
4. What would be the curricular implications of these findings?

Although this study could be described as being in the tradition of previous linguistic research on the relationship between grammar study and improvement in writing, it is not a grammar-based study. Indeed, it was an examination of recent linguistic studies of the relationship between grammar and writing that led this researcher to hypothesize that sentence-combining practice need in no way be dependent on formal knowledge of a grammar, traditional or transformational.

This study does, however, rely on transformational theory. The sentence-combining exercises written out by the students are entirely dependent on a theory of generative grammar. Equally important to this study were the recent transformationally oriented studies of Hunt and O'Donnell on the development of syntactic maturity. This researcher simply felt that, although a knowledge of transformational—or for that matter, traditional—grammar is an indispensable tool for the researcher and a potentially useful tool for the teacher of English, there was no justification for assuming that it would help students write better. However, the deliberate elimination of generative-transformational

grammar study from this experiment and the systematic exclusion of grammatical terminology from the entire experiment must in no way be construed as a rejection of grammar study *per se*. The large and very interesting question as to whether grammar should be studied in schools at all will not be dealt with in this study.

Recent studies dealing with the relationship between a certain kind of language study and writing are examined in Chapter One. The first part of Chapter Two demonstrates that normal growth in syntactic maturity can be measured in quantifiable terms. The second part of the chapter both describes and suggests a rationale for sentence-combining practice that is in no way dependent on students' formal knowledge of a grammar.

Chapter Three discusses the design and the procedures used in this investigation, including the hypotheses to be tested, the research design, the subjects, the independent, dependent, and extraneous variables, the experimental and control treatments, and the measurement and analytic procedures.

In Chapter Four the results of the analysis of the data are both presented and discussed.

The final chapter contains the conclusions of this study, the theoretical and practical implications of the conclusions for the teaching of writing, and, finally, some suggestions for further study.

CHAPTER 1

RECENT RESEARCH ON GRAMMAR STUDY AND WRITING

With the publication of *Syntactic Structures* in 1957, Noam Chomsky revolutionized grammatical theory. Subsequent refinement of his generative-transformational theory by Lees (1960, 1961), Chomsky himself (1965), and others has led to a general acceptance of transformational theory as an efficient method of formulating "the most economical and coherent system of explicit rules adequate to characterize all the grammatically well-formed sentences possible in a particular language" (O'Donnell, Griffin, and Norris, 1967, p. 15). Chomsky and the other transformationalists' demonstration of the superiority of certain aspects of generative over those of traditional grammar led Meckel (1963), in a survey of the effects of the teaching of grammar on writing, to observe that "much of the earlier research on teaching grammar must be regarded as no longer of great significance outside the period in educational history which it represents" (p. 982).

While acknowledging generally the truth in what Meckel has said, it is nevertheless interesting to examine some of the studies completed before Chomsky which concerned themselves with the relationship between formal grammar study and writing because that history is a curious one indeed. Study after study tested the hypothesis that there was a positive relationship between the study of grammar and some aspect or other of composition. Result after result denied this hypothesis. Many of the findings either clearly indicated, or at least strongly suggested, that the study of grammar not only did not have the desired result, but that there also resulted some undesirable side effects. Braddock (1963), in a review of formal grammar and its effect on writing, declared that

> In view of the widespread agreement of research studies based upon many types of students and teachers, the conclusion can be stated in strong and unqualified terms: the teaching of formal grammar has a negligible or, because it usually displaces some instruction and practice in actual composition, even a harmful effect on the improvement of writing. (pp. 37–38)

Subsequent reviews of research by Bateman and Zidonis (1964) and

Mellon (1965*a*, 1967) corroborated Braddock's statement. The reader might ask, "Why 'curious' then?" The history of this extensive research is a curiosity simply because *so much* research has been conducted on this question. Why were English researchers so persistent? Why didn't they recognize that there was indeed no relationship between formal grammar study and writing?

The answer is, perhaps, a surprisingly obvious one. English teachers must have *instinctively* felt that somehow, somewhere, someone would find the connection that they "knew" was there. For over a century teachers had been teaching grammar and expecting, indeed assuming, that it would help their students write better.

Further proof of this almost mystical faith in the efficacy of grammar study can be found in the nature of the studies produced by linguistic researchers after the publication of Chomsky's *Syntactic Structures*. Instead of abandoning this line of investigation altogether, these researchers immediately set out to examine the claim that exposure to generative-transformational grammar would improve students' writing. And it wasn't long before their optimism paid off. Between 1964 and 1968 there appeared several studies whose results indicated that the transformational grammar approach did have an effect on student writing.

Bateman and Zidonis published a study which claimed that a knowledge of generative grammar enabled students to increase significantly the proportion of well-formed sentences they wrote and to increase the complexity without sacrificing the grammaticality of their sentences. In 1968 this researcher was a doctoral student at the Florida State University in the Experienced Teacher Fellowship Program and participated in some lively discussions of the Bateman and Zidonis study and of a similar kind of study by John Mellon. These discussions led the present researcher to the idea that perhaps the Bateman and Zidonis study was successful only because of the sentence manipulation their students had performed, and to wonder whether Mellon's grammar study had hindered his students in any way.

Although Mellon was at pains to differentiate his study from that of Bateman and Zidonis, the two studies proved to be remarkably similar. They were, as Mellon (1969) claimed of the Bateman and Zidonis study, "the [first experiments] in the entire canon of grammar and writing research that explicitly [advanced] a sentence-structure hypothesis" (p. 10). Both exposed their students to the study of a generative-transformational grammar. Both were interested in the possibility that error reduction would result from their experimental treatments. Bateman and Zidonis concluded that a knowledge of gen-

erative grammar could enable students to reduce the occurrences of errors in their writing. Mellon originally planned an analysis of error incidence but abandoned the project as too time consuming and expensive. In their findings both studies claimed that their students wrote sentences that were syntactically more complex or mature. And they both relied heavily on generative grammar for their various analyses.

Of course, there are obvious differences between these two studies, which a brief appraisal of Bateman and Zidonis and a more detailed look at Mellon should make clear.

The Bateman and Zidonis Study

The study conducted by Bateman and Zidonis (1964) was a landmark in the history of research investigating the effect of grammar on writing because it hypothesized that the study of a transformational grammar would affect the structure of the sentences students wrote. As with any pioneer study, it should be looked upon as a product of its time and a reflection of the state of knowledge of that period. In 1962–63, when this study was conceived and planned, Chomsky's generative-transformational grammar was relatively new. Extravagant claims were being made for its "generative" capabilities by overenthusiastic supporters; equally strenuous denunciations flowed from traditional grammarians who perhaps felt threatened. A further difficulty was the complex prose style of Noam Chomsky, who used a sort of "linguistic shorthand" frequently couched in the language of mathematics to "clarify" his ideas. Not exactly ideal fare for the average English teacher, who typically abandons the study of mathematics at an early age. Feelings were high, misconceptions rife, acrimony bitter.

It is not surprising, then, that when Bateman and Zidonis discovered that their experimental group had reduced the incidence of errors and at the same time had employed more mature sentence structures, they concluded that it was a result of their students' knowledge of transformational grammar. Generative grammarians stood vindicated. Or so it appeared.

No useful purpose would be served by examining the Bateman-Zidonis study in detail, but since several criticisms leveled at it by Mellon deserve some attention, a brief description of some aspects of the study might prove useful.

The investigators selected the ninth grade of the University School of Ohio State University and randomly assigned the students to two classes. Over a two-year period the experimental class studied the

"regular curriculum" and specially prepared materials from the area of generative grammar. Six pre-test and post-test compositions were collected from both sections during the first three months of the first year and the last three months of the second year. The investigators reported the sentences according to whether they contained errors or not. They followed this by calculating the mean "structural complexity scores" for each of the two sentence types. The structural complexity of a sentence was derived by adding one to the number of transformations each sentence contained. Forty-six transformational rules were listed by the investigators and used to identify the transformational history of each sentence.

Bateman and Zidonis reported that their experimental students' study of transformational grammar enabled them to increase significantly the proportion of well-formed sentences they wrote and to reduce the occurrence of errors in their writing. The increase in average structural complexity scores for well-formed sentences was 3.79 for the control class and 9.32 for the experimental—which, of course, represented an increase of over five transformations per sentence. Interesting results despite the fact that the greatest changes in the experimental group were made by only four students. Mellon rightly questioned whether analysis of variance was the appropriate statistic here. Nevertheless, he seemed to ignore an indisputable fact: the experimental students did write sentences of greater complexity. Four students comprised approximately one-fifth of the experimental population. Although some of Mellon's criticisms are well founded, others are, perhaps, a little too severe. Mellon took the investigators to task for not utilizing the findings of Kellogg Hunt, ignoring the fact that the Bateman-Zidonis study, a two-year enterprise, was completed and published in the same year as Hunt's study (1964). Also questionable is the severity of Mellon's reaction to the investigators' description of what the control class studied. Mellon was correct, of course, when he suggested that more information should have been given than the following:

> Each class studied what would be considered the regular curriculum at the school with this exception: the experimental class studied materials specially adapted by the investigators from the area of generative grammar. (1964, p. 10)

> In each class, improvement of pupil writing was one of the major objectives. The classes differed only in content: no formal grammar was studied in the control class; the grammatical content described in Chapters 2 and 3 was studied by the pupils in the experimental class. (1964, p. 117)

Some sort of outline of the English courses that the experimental and control students were exposed to would no doubt have been useful. However, "regular curriculum" does give the reader some idea of what went on. Surely any unusual subject matter or technique employed would either have been avoided or reported in some detail. It does seem that Mellon reacted too strongly when he declared, "Surely this is a major oversight in such a study" (1969, p. 13).

Mellon's final criticism of the Bateman-Zidonis study is sound. He claimed that the hypothesis of the entire experiment was based on a line of argument which was difficult to accept rationally, and rightly took Bateman and Zidonis' study to task for claiming that "pupils must be taught a system that accounts for well-formed sentences before they can be expected to produce more of such sentences themselves" (1964, p. 3). Abundant research has demonstrated that young children have already mastered a very large proportion of the structures of English before they get to school and quickly learn to handle the remainder in elementary school. However, this whole question of language development will be discussed in detail later.

Although the hypothesis of the Bateman and Zidonis study was based on a questionable assumption and had certain methodological problems, it is nevertheless a significant study. Being wise after the event is a favorite practice of researchers, and "if only I had . . ." a common cry. This is within the nature of man. Their study was a pioneering one. That others would follow was inevitable. That they would profit from mistakes and oversights is within the nature of the discipline. The significance of this study lies in the discovery that students who study transformational grammar end up writing sentences that have fewer errors and are more complex syntactically than students who do not. That is significant indeed.

The Mellon Study

Mellon's purpose was to find out whether students who were exposed to what he called "transformational sentence-combining practice" would significantly increase their normal rate of growth in syntactic ability. The results indicated that the students who were exposed to the treatment showed statistically significant increases in what Mellon called "syntactic fluency."

Mellon's study was a reaction to the study of Bateman and Zidonis and showed signs of having profited from Bateman and Zidonis' experiences. Mellon was not as interested in the possible corrective function of his sentence-combining practice, the error-reduction effect

of so many previous studies, but concentrated on the other important aspect of the Bateman-Zidonis study, the increase they found in syntactic complexity. He rejected the Bateman-Zidonis claim that the learning of grammatical rules *per se* could lead to improvement in student writing or that these rules could be applied in any *conscious* manner by the writer. Mellon suggested that it was the sentence-combining practice and not the study of the grammar that had an effect on the students' writing behavior, a point which will be examined later.

Mellon's experimental population consisted of 247 white native-American middle-class seventh grade students in twelve classes in four schools in the Boston area. The schools were chosen to represent urban, suburban, and private education.

There were three separate treatments. Five experimental classes studied a year-long course in transformational grammar that included a large amount of sentence-combining practice. Five control classes studied a course in traditional grammar. Two placebo classes studied no grammar at all but had extra lessons in literature and composition, but no additional writing assignments. All twelve classes studied the regular English program for their particular schools.

The writing sample at each test time consisted of nine compositions, each written in one class period during the first four and last four weeks of school. Mellon selected, for each student before and after the treatment, the first ten T-units from each composition that the student wrote, ninety T-units in all at each test time.* Mellon adapted the T-unit which Hunt (1965) described in his study *Grammatical Structures Written at Three Grade Levels.* (Hunt's and Mellon's T-units will be discussed later.) The main dependent variables in the study were twelve factors of syntactic fluency, including T-unit length, subordination-coordination ratio, the number of nominal and "relative" clauses and phrases (which included adverbial clauses of time, place, and manner), clustered modification, and depth of embedding.

Comparison of pre- and post-test results indicated that the experimental group showed increases in all twelve factors and that the gains were significant at or beyond the .01 level of confidence. Mellon also compared the increases achieved by his group with normative data from the Hunt study. Hunt had established normal per year growth for nominal clauses and phrases and relative clauses, phrases, and words. Mellon found that his experimental group showed from 2.1 to

*A T-unit consists of a principal clause and any subordinate clause or nonclausal structure attached to or embedded in it.

3.5 years of growth on these same factors, while his control group failed to show even one year's growth. Mellon's hypothesis that the writing of the experimental group would show a significant increase in syntactic fluency was substantiated. The English teaching world was justifiably impressed by these findings.

Although the Mellon study is a substantive piece of innovative research, it does pose a number of rather interesting problems. The first problem is an unusual one. Which of the Mellon reports is being discussed? There are two reports, one published in 1967 by Harvard University and the other in 1969 by NCTE. In the present discussion reference will be made to the NCTE report. However, statements from the Epilogue of the 1969 report will be considered later because, in this researcher's opinion, the Epilogue constitutes something akin to a change of mind on Mellon's part and, indeed, lends some measure of support to the hypothesis of the present study, which was outlined in the spring of 1969.

A critical problem facing anyone examining the Mellon study is the question as to what exactly constitutes transformational sentence-combining practice. Does "transformational" mean simply that the students' practice was based on the *researcher's* knowledge of deep and surface structure which led him to construct the combining problems in kernel form? Or does "transformational" imply the *student's* knowledge of generative grammar? Examination of *Our Sentences and Their Grammar* (1965*b*), Mellon's 162-page experimental text, reveals that he taught generative grammatical concepts all the way through. For example, on pages 137–138 the concept of pre-noun modifier is presented and the students are encouraged to be able to identify adjective phrases, participles, passive participles, and participial compounds. Although the student is "taught" these concepts in one and a half pages, he never uses them and indeed never encounters them again until they appear as part of a rather formidable list—for seventh graders, at any rate—in the last lesson (p. 157).

Mellon's experimental treatment demanded three things of his students: (1) that they learn transformational rules like T:rel, T:gerund, T:der-NP, T:infin, which they had to apply in the combining practice; (2) that they learn concepts like passive infinitive phrase, appositive noun phrase, participial compound, etc., which they were never asked to apply consciously in the combining practice; and, most important, (3) that they learn a quite difficult set of grammatical rules (how well we are never told). Mellon described his grammar as elementary. The present researcher finds it difficult to believe that seventh graders

would find it easy to memorize and/or conceptualize such theoretical constructs as:

T:gerund = NP + AUX + VERB + NP → NP + S + VERB + ING + OF + NP.

T:infin = NP + AUX + VERB + remainder → FOR + NP + TO + VERB + remainder.

T:der-NP = NP + AUX + VERB + NP → NP + VERB + URE + OF + NP.
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The last example is a particularly intriguing one because a student who assiduously followed the rule for T:der-NP, which is summarized on page 106 of the experimental text, would have found, when writing out problem 3 on page 107, that the rule did not work. "Simmons published the experiment" cannot be changed by literal adherence to Mellon's rule to "Simmons' publication of the experiment. . . ." Indeed, on the same page (107) there are five more examples, *none* of which will give the student the proper answer if he follows Mellon's T:der-NP rule.

Analysis of many of these rules forced this investigator, who had taught English to seventh graders for about ten years, to conclude that many were too difficult and that Mellon's average and below-average students were perhaps using the examples and largely ignoring the theoretical apparatus when they wrote out their sentences.

One is left, then, with an insoluble problem. Was it the study of this particular transformational grammar that led to the syntactic gains made by Mellon's experimental group? Or was it the combining practice only that led to these increases? Or was it the interaction of the grammar study and the combining practice? The design of Mellon's study does not permit this question to be answered because, as previously mentioned, he taught a grammar that was only partially utilitarian and exposed the students to combining practice too.

There is evidence that this grammar was quite difficult. Perhaps Mellon's experimental group would have shown greater increases in syntactic fluency if the grammar studied had been easier. The grammar studied may have inhibited some students and in some way counteracted possible gains. Again, the study's design excludes the answer to this question. Mellon could perhaps have had a fourth group study the grammar alone and write out a limited number of illustrative sentences to clarify the particular concept being studied.

Mellon did not mention whether the experimental students were

tested as to their relative knowledge of the grammatical concepts studied. Was there a relationship between any of the twelve factors of syntactic fluency and the students' relative knowledge of the grammar studied? Mellon declared that

> The chief purpose of this course was neither to rectify the student's language behavior nor to facilitate the sentence-combining practice. Rather, it was to present to junior high school students, in an obviously introductory manner, an elementary transformational grammar describing the language competence they and all other speakers already possess. As with contemporary studies in other curriculums, the main justification for this course was given in terms of the experiences and learnings generated by the inquiry it occasioned. (1969, p. 27)

If the chief purpose was to teach an elementary grammar, it would seem desirable to have tested the students' knowledge of that grammar. The general impression one gets from an examination of the experimental text is that grammatical concepts are being *mentioned* but not thoroughly taught. For example, highly complex branching diagrams appear on page 116, and yet the student is never asked to construct one. On pages 127 and 128 six very difficult grammatical terms are introduced, illustrated but not defined, and then summarized—all on scarcely more than a page. They never appear again until the overall review, where they are simply listed. It would be a rare seventh grade student indeed who could learn the terms participial phrase, passive participial phrase, infinitive phrase, passive infinitive phrase, prepositional phrase, and appositive noun phrase by being shown only one example of each.

Mellon also asserted that

> . . . as an activity designed to reinforce and further illustrate transformations earlier learned by the student, the problem-solving practice was considered an integral part of the grammar course and may be viewed in this light quite without regard for its possible effects upon syntactic fluency. Its role was very much like that of the straightforward exercises in formula application which are employed, for example, in modern school algebra. (1969, p. 27)

An examination of *Our Sentences and Their Grammar*, especially of the second half, would suggest that this is not entirely the case. Indeed, Mellon added thirty daily five-minute problems which were not included in the text and which are further proof that the combining practice was not simply used for illustrative purposes. In fairness to Mellon it should be pointed out that in the Epilogue he wrote in 1969, he freely admitted to this charge, agreeing that there would be no need for so many examples, especially any involving multiple embedding.

While agreeing with Mellon that his study should have been presented in what he described as an "a-rhetorical" setting, the present researcher is not at all convinced that sentence combining should *remain* "a-rhetorical." Mellon continually insisted on the "a-rhetorical" nature of his study, when there is limited but indisputable evidence that his treatment was not consistently rhetoric-free. For example, in the Preview Lesson of the treatment, Mellon says to his students,

> Now that you are beginning junior high school, you will be devoting a great deal of time to developing your writing skills. Will the study grammar help you to write better? No one really knows the answer to this question. But there are several reasons for thinking that it may. . . . By the end of the school year, you should be writing sentences more skillfully than you do now. (1965*b*, p. 2)

This is a clear assurance that grammar study should help them to write better. Later, while commenting on an exercise where the student has to embed about eight statements or kernels into a given sentence, "Yesterday we read over those manuscripts," Mellon says,

> Even though we have not used all the modifiers possible, you may feel that we have used too many. That is, we may have chosen too many additional things to say about the "manuscripts" in our main-clause statement. . . . thus, you should choose these details carefully and try to build effective noun modification. The use of *appropriate* added detail often is the difference between interesting writing and ordinary lackluster work. For example, here is a "story" that consists of three sentences whose nouns are unmodified:
>
> A girl set out for a picnic into the woods.
> There she met a wolf.
> The wolf joined her for a lunch.
>
> Now we shall add several insert sentences to each of the main-clause sentences given above. Notice how these inserts provide descriptive detail and give our "story" a recognizable tone. (1965*b*, pp. 145–146)

On page 141 he says, "You will find that the repeated modification of a single noun sounds quite natural."

It is obvious that there is, perhaps inevitably, a rhetorical tone to these statements, an implied or explicit exhortation to the student to use these devices in his own writing. There is a concern with how "it" sounds. Doesn't this imply an audience critically reading or listening? The question of what Mellon means by "a-rhetorical" and its implications for the present study will be taken up again in the last chapter.

Finally, there is the rather interesting question as to when an enhanced syntactic maturity would become discernible to the general reader. Bateman and Zidonis ignored this issue, and Mellon was satisfied that no harmful side effects appeared. If sentence-combining

practice is designed to make students write sentences that are more mature syntactically, it seems reasonable to assume that at some point this syntactic difference would show qualitatively. The results of Mellon's quality evaluation were disappointing. The *control* group was judged on post-tests to have written compositions that were significantly better than those written by the experimental group. Mellon attributed these results to the small sample size and/or the effect of one especially talented control teacher.

Would a larger, more reliable sample have favored the experimental group? Mellon, whose experimental group increased their T-unit length by approximately 1.2 words per T-unit, suggested that this increase is not sufficient to become noticeable even to an experienced grader. Two rather interesting questions arise quite naturally from this observation: (1) At approximately what point would an experienced grader recognize that there were syntactic differences in the students' writing? and (2) Would these syntactic differences influence the grader's evaluation of the students' writing?

The Bateman-Zidonis and Mellon experiments, then, exposed students to the study of transformational grammar, and both studies showed that their experimental groups wrote sentences which were syntactically more mature. Bateman and Zidonis assumed that it was a knowledge of generative grammar and its application that enabled their experimental subjects to write differently. Mellon called to question such an assumption, claiming that it was the combining practice, not the grammar, that enabled his students to write differently. But the design of the Mellon experiment makes it impossible to ascertain whether the study of transformational grammar had a positive or negative or no effect on the students' syntactic development.

Therefore, although there is at least some doubt as to what exactly caused their students to write differently, there can be no doubt that both in the Bateman and Zidonis study and in the Mellon study the experimental treatments significantly altered the writing behavior of students exposed to them.

Audio-Lingual Studies

Another group of linguistic researchers who have altered the syntactic writing behavior of their students are the advocates of the audio-lingual or oral-drill technique, which has, of course, been used in the teaching of foreign languages for a number of years. Three rather interesting audio-lingual experiments by Ney (1966), Raub (1966), and Miller and Ney (1968) have been undertaken with gen-

erally significant results. Because the methodology in all of these experiments was, according to Ney, "basically very similar since they followed the model of the pilot project with seventh graders which was reported in the *English Journal* by Ney" (pp. 2–3), no useful purpose would be served in analyzing each study in detail.

In all three studies the experimental treatment was designed "to condition the students to use sentences of predetermined syntactic types through verbal manipulation of representative sentences from oral cues" (Ney, 1968, p. 2). The three studies also included written exercises which were related to the oral exercises in order to effect transfer of training from speech to writing. In all but one of the experiments the progress of the students was measured by having the students write for an unspecified time about a film which they had just been shown. The sentences in these compositions were classified by type and counted according to techniques devised by Hunt (1965) and O'Donnell, et al. (1967). The experimenters were interested primarily in finding answers to two questions: (1) Did the experimental classes write more of the structures that they had been conditioned to use than their respective control classes? and (2) Were the experimental classes' sentences syntactically more mature?

In these studies the pre- and post-test film was the same, to control for the possible influence of subject matter on the syntactic structures the students might use. Since students readily use the syntactic patterns they hear in a film, they were shown, with one exception, films without narrative or dialogue. Ney summed up the test results by declaring that,

> In the three experiments in which pretests and posttests were given, improvement in the form of a greater frequency of occurrence on the posttests of the structures practiced was always measureable although it did not always reach a level at which the experiment was statistically significant. (1968, p. 4)

It is obvious, then, that audio-lingual techniques cause some change in student writing behavior.

The Miller and Ney Study

The last of the three experiments briefly described here, the Miller and Ney study (1968), was the most interesting for the purposes of the present study. The Miller and Ney study compared the performance of a fourth grade experimental class which was exposed for one year, September to June, to regular oral practice in manipulating syntactic structures with a fourth grade control class that had regular lessons in reading and composition.

The experimental class was exposed to the treatment four days a week during thirty-seven periods of from thirty to forty minutes and in the second half of the experiment, two days per week during thirty periods averaging forty to fifty minutes. Typically, students were asked to repeat two cue sentences which were written on the blackboard, for example,

The boy put the old man down.
The boy was very tired.

The teacher would then read the sentences in a combined form, e.g., "The boy, who was very tired, put the old man down." Then the students would perform choral reading of this sentence. These were reinforced by ten similarly structured combined sentences which were practiced orally by the class. Review exercises were also constructed which contrasted the differing sentences studied. The students were also given practice in writing out correct sentences when the teacher read sets of cue sentences.

Generally speaking, the treatment was designed to produce three types of sentences:

1. sentences with *who* and *which* adjective clauses:
   A. He looked at the boy. The boy came out of the river.
   B. He looked at the boy who came out of the river.
2. sentences with initial and final adverb clauses:
   A. The princess couldn't be married. She was too proud.
   B. The princess couldn't be married because she was too proud.
   B. Because she was too proud, the princess couldn't be married.
3. sentences with subject and predicate nominals derived from the deep structure:
   A. Something disturbed the king. The princess talked.
   B. The talking of the princess disturbed the king.

After the oral practice the students participated in choral reading from various textbooks, from rewrites of Mark Twain's work, and from folk tales written for foreign students. This kept the lessons interesting, gave the students additional practice, and provided a linguistic context for the language exercises.

Both the experimental and control groups showed an increase from the first pre-test in the structures which were taught, but only the gain shown by the experimental group was statistically significant. The results from the second post-test indicated that the experimental group was using the structures practiced far more frequently than the control group and that the experimental gain was significant at the

.001 level of confidence. It was felt that the gain achieved by the control group was directly attributable to the effect of the narration on the first film. The experimental group also wrote a greater number of words than the control group, and the increase in experimental output was statistically significant. Analysis of variance indicated that on both the incidence of structures practiced and number of words produced at the second post-test the difference in performance was in favor of the experimental group and significant at the .001 level of confidence.

The Miller and Ney study also measured the length of multi-clause and single-clause T-units and compared the scores of the experimental and control groups by analysis of variance. On these measures the experimental group showed a generally greater improvement than the control group, the most impressive gain being made in the number of words in multi-clause T-units from the second pre-test to the second post-test. The experimental group wrote just over twice the number of words in multi-clause T-units on the second post-test as they had done on the second pre-test. In comparison with the control group the experimental group wrote fewer simple sentences and proportionately more complex sentences.

Summary

It is clear from the evidence of the studies surveyed in this chapter that there is, contrary to the findings of the many traditional-grammar writing studies, a very real connection between a certain kind of language study and writing. Recent experiments have effected change in student writing behavior. The experimental groups wrote sentences that were syntactically more mature. Oral and written drills undoubtedly made a difference. Although it is at least questionable whether it was a knowledge of generative grammar that led Bateman and Zidonis' students to write more mature sentences, it is not unreasonable to assume that something in their experimental treatment must have caused those students to write more maturely. And lastly, although the design of Mellon's study does not provide an obvious basis for his conclusion that it was the sentence-combining practice that made the difference, common sense tells us that Mellon was probably right. Indeed, Mellon's multiple embedding of kernel sentences is the most promising technique yet developed for utilizing transformational theory. However, the unanswered question remains: What effect did the grammar study have on Mellon's experimental group?

CHAPTER 2

SYNTACTIC MATURITY AND SENTENCE COMBINING

English teachers have always been aware that on the average younger children do not write as well as do older children, that high school students write better than elementary students, and, of course, that educated adults write better than high school students. Included in this judgment were decisions not only about the ideas, organization, vocabulary, and spelling used by these groups, but also about the style. It was obvious to these teachers that the more mature writer somehow put his ideas down differently. His sentences were generally longer. He put more into his sentences by lengthening his independent clauses and by using more subordination. These sentences were usually more complex, fancier, harder to read. English teachers called the older student's style more mature. And if his style failed to please them, it might be called immature or choppy. Comments like "Your sentences lack flow" or advice like "Try to write more naturally" are commonplace on students' papers. "Your sentence structure lacks maturity" is perhaps an accurate but not very helpful piece of advice to give to a student. He might even ask his teacher what was meant. And what to do about it.

In the present study maturity of sentence structure will be defined in a statistical sense as the range of the sentence types found in samples of the students' writing, and it will usually be referred to as "syntactic maturity." Generally speaking, English teachers have been able not only to distinguish between elementary and high school student writing, but also to identify normal stages of development in student writing as typical of a particular grade range. Confronted by a composition written by a fifth grader, an experienced teacher could describe it as syntactically mature or immature or normal. The trouble was and is that teachers often disagree. Differences of opinion about something as vague as style would be inevitable. What was needed was some kind of objective measure that would confirm the intuitions teachers feel about maturity of sentence structure and describe the features that constitute syntactic maturity in quantifiable terms. If quantification could be satisfactorily accomplished, then

normal stages of syntactic development could readily be identified and objectively verified.

The advantages of such measures for the English teacher are obvious. Students who are not displaying "normal" growth could be quickly identified and given remedial instruction. But what about the student who is developing "normally"? Is this the best that he can do? Students who come from a home environment that has rich cultural and linguistic experiences would predictably be above average in syntactic maturity. Since variations in syntactic maturity are indisputable and since normal growth is really only a way of saying average growth, it seems reasonable to assume that this normal rate of growth could be accelerated or retarded under certain treatment conditions. This study thus directs itself to the question of whether sentence-combining practice will enhance the normal growth of syntactic maturity.

Language Development Studies

The many studies of language development that have been published have been critically reviewed by Heider and Heider (1940), McCarthy (1954), and more recently by Carroll (1960), Erwin and Miller (1963), Mellon (1965*a*), and O'Donnell, et al. (1967). There is therefore no advantage to be gained by reviewing the literature again.

Traditionally, observations on language development or syntactic maturity have identified the lengthening of sentences and increased use of subordinate clauses as indicators of progress toward a mature style. More recently, several normative studies have further specified the syntactic characteristics that distinguish the writing of older from that of younger writers. Two of the more important recent studies on language development are those done by Hunt (1964, 1965) and O'Donnell, et al. (1967). Because of limited time and resources which necessitated his performing all the syntactic segmenting and counting himself, the present researcher was anxious to find an economical, efficient, and reliable measure or measures of syntactic maturity. Although Mellon had investigated twenty variables and had found all but two of them to be significant at the .05 and more often beyond the .01 level of confidence, many of these measures seemed to be highly redundant. The findings of the Hunt and O'Donnell studies suggested a reasonable compromise.

Hunt (1965) investigated 1000-word samples of the free writing of school children in grades 4, 8, and 12 and the writing of skilled adults who published in *The Atlantic* and *Harper's*. Hunt introduced a new

measure called a "minimal terminable" unit or "T-unit," which was a refinement of Loban's (1961, 1963) "communication unit." The T-unit is one main clause plus any subordinate clause or nonclausal structure that is attached to or embedded in it. The experimental population in the present study consisted of seventh graders, and anyone who has taught seventh graders knows how notoriously forgetful they can be when it comes to remembering to put down something as remote from their daily concerns as a period at the end of a sentence. Could groups of words be called a sentence when they displayed all the characteristics of a sentence, including being followed by a capital, if they did not in fact terminate with a period? Also, some students put periods where we would put commas. What to do about that? The solution was simple: ignore the sentence and concentrate on a more reliable and more objective measure, the T-unit. We're interested, then, among other things, in the incidence of clauses and T-units.

Hunt discovered that as students get older they tend to write longer clauses and that skilled adults carry that tendency further. Maturing children write more clauses per T-unit, but skilled adults do not carry that tendency much further than do twelfth graders. As they get older, these children write longer T-units, and skilled adults carry that tendency even further because they tend to write lengthier clauses.

Hunt also discovered that for grades 4, 8, and 12 the best of these indexes of syntactic maturity is T-unit length. Second best is clause length; third best is clauses per T-unit. When the writing of skilled adults is included in the sample, there is only one difference. Words per clause becomes as significant an index of syntactic maturity as words per T-unit.

In the O'Donnell study (1967) the investigators sampled the speech of thirty children in kindergarten and thirty in grades 1, 2, 3, 5, and 7. They also took writing samples from the students in grades 3, 5, and 7. After viewing two eight-minute films with the sound turned off so that the narrator's language would not influence their language production, the children were asked to tell the story of the film privately to an interviewer and to answer certain questions related to the narrative.

O'Donnell, using Hunt's T-unit to segment the student's output, found that at every grade the average length of the T-unit increased. The number of clauses per T-unit also increased with the child's age. Although O'Donnell did not report on the number of words per clause, this figure can be calculated from his data on T-unit length and clauses per T-unit. The clause length figures calculated from O'Donnell's data are similar to those of Hunt, showing an increase at each grade level (Hunt, 1970, p. 9).

Even a casual examination of Table 1 reveals that for words per T-unit, clauses per T-unit, and words per clause there is generally a steady increase moving up the grades for the combined figures of O'Donnell and Hunt through grade 7. Hunt's figures for grades 8, 12, and beyond indicate a continuation of this steady increment.

Table 1
Words per T-Unit, Clauses per T-Unit, Words per Clause

Grade Level	3	4	5	7	8	12	Superior Adults
Words/T-Unit							
O'Donnell	7.67		9.34	9.99			
Hunt		8.51			11.34	14.4	20.3
Clauses/T-Unit							
O'Donnell	1.18		1.27	1.30			
Hunt		1.29			1.42	1.68	1.74
Words/Clause							
O'Donnell	6.5		7.4	7.7			
Hunt		6.6			8.1	8.6	11.5

Source—Adapted from Hunt (1970). Based on data reported by Hunt (1965) and by O'Donnell, et al. (1967).

Both Hunt and O'Donnell also investigated the number of sentence-combining transformations used by their experimental subjects and discovered that this number increased as the subjects got older. Hunt found that older writers, especially skilled adults, use a much larger number of transformations per T-unit and per clause and concluded that this explained the fact that clauses, especially those of skilled adults, increased in length with maturity.

In examining subordinate clauses, Hunt reported that the most important developmental trend was an increase in adjective clauses, which more than doubled in frequency, the percentage increase being slightly greater during the second half of the time span. The number of adjective clauses per T-unit for grades 4, 8, and 12 was .045, .090, and .16, respectively. This represented an almost fourfold increase. Hunt concluded by suggesting that the increase in number of adjective clauses was most important as an index of maturity. His superior adults used .25 per main clause, which was more than the number used by his twelfth graders. Hunt then declared that, for adjective clauses,

> the rate of increase from one of the four groups to the next is remarkably steady, and also rather dramatically large. Over the three grades

> (4, 8, 12) the increase is nearly fourfold, but if we include the fourth group (superior adults) the increase is more than fivefold. The likelihood that a fourth grader will embed an adjective clause somewhere in a T-unit is only 1 in 20. The likelihood that a superior adult will do so is 1 in 4. (1965, p. 90)

Hunt reported also that noun clauses significantly increased, although their overall percentage increase was about half that shown by adjective clauses.

Hunt's skilled adults wrote T-units 40 percent longer than did his twelfth graders. The older writers not only wrote more subordinate clauses per main clause, especially adjective clauses, they also wrote longer clauses, which, of course, combined with the greater number of clauses, accounted for their writing longer T-units. The O'Donnell study stressed the importance of T-unit length as the most effective single measure of syntactic maturity:

> This investigation supports the findings by Hunt (1964, 1965) that when fairly extensive samples of children's language are obtained, the mean length of T-units has special claim to consideration as a simple, objective, valid indicator of development in syntactic control. (1967, pp. 98–99)

O'Donnell also suggested that the enormously time-consuming process of counting the kind and depth of every sentence-combining transformation might perhaps be regarded as redundant when he stated that

> The readily performed calculation of mean lengths of T-units, however, appears to give a close approximation to results of the more complicated accounting of sentence-combining transformations. (1967, p. 98)

While agreeing that older writers employ different sentence structures than do younger writers, the English teacher might have observed that older writers simply deal with different subject matter. Perhaps it was the constraints of this subject matter that accounted for the more mature syntax used by older writers. The Hunt and O'Donnell studies that have already been examined dealt with two different kinds of free writing, and free writing rendered this question unanswerable.

An experiment conducted by Hunt (1970) was designed to find out whether students, differing in age and maturity level, and adults would display different levels of syntactic maturity when confronted with the *same* subject matter. These students would say the same thing, because each was given a set of extremely simple sentences to combine and instructed to utilize all of the information they contained. When a writer added any idea that was not contained in the original thirty-two sentences, the whole sentence was deleted.

The instrument used in the study was developed by Roy O'Donnell of the Florida State University. It is a passage containing thirty-two simple sentences, which the students were instructed to "write in a better way." The instrument was administered to over a thousand students, almost exclusively white, in grades 4, 6, 8, 10, and 12 in Tallahassee's public schools. From each grade level fifty students were chosen to represent "something close to a normal distribution of academic ability" and from the scores for each student's writing means were computed for each grade and for the high-, middle-, and low-ability groups in each grade. Although Hunt used a number of new measures, and got especially interesting results with what he called structures less than a predicate and less than a clause, his findings relating to the number of embedding transformations and to clause and T-unit length were of particular interest to the present study.

Although all the writers were required to say the same thing in Hunt's experiment, the older writers displayed superior syntactic manipulative ability. Their sentences were affected by their syntactic maturity. Older writers tended to use a wider variety of transformations when reducing inputs to less than a predicate. They wrote longer clauses and longer T-units. Interestingly, the trends indicated in Hunt's 1970 study are the same as those shown in his and O'Donnell's studies of free writing.

Of particular concern to the present study were Hunt's findings that the number of embeddings of kernels correlated highly with clause length and that syntactic maturity consisted chiefly in the ability to make many embedments per clause. Hunt demonstrated that syntactic maturity involves a manipulative skill that is, in some sense, independent of subject matter. Even when the older writer added no more information, he still wrote more words per T-unit and more words per clause. He displayed more syntactic maturity.

The research reviewed in the present study has shown that as the child matures, he tends to embed more sentences, which results in an increase in clause and T-unit length in his writing. Perhaps these increases can be attributed to his cognitive development. Or perhaps they are the result of his imitating the more mature styles that he encounters in his reading and in conversation at school. Whatever the reason, there is clearly a developmental trend. Therefore, since they tend to increase with age and are indicative of a developing linguistic maturity, the syntactic characteristics outlined here would appear to be efficient criteria for describing syntactic maturity.

Pattern Practice and Modeled Writing

In his study Mellon considered several "grammar-related activities" that might lead to "syntactic fluency" and dismissed them in turn. These activities were modeled writing, pattern practice, applied transformational rules, and traditional sentence parsing. Since the present researcher agrees with Mellon's able rejection of applied transformation rules and traditional sentence parsing, nothing more need be said here about them.

Pattern practice requires students to write sentences in accordance with a series of grammatical commands. Mellon dismissed this activity because he claimed that it forces the student to search for "pointless content" and thus distracts him "from the very thing to which he is supposed to be attending, namely, the given pattern" (1969, p. 21). While agreeing that there is a possibility of students being distracted when engaged in this activity, the present researcher cannot agree that these are grounds for the abandonment of such an activity. An imaginative teacher could so structure such an assignment as to make the students' search for meaningful content interesting *per se*. For example, one could imagine a series of exercises in which the student is given one, two, then three blanks to fill in in a partially written sentence whose deep structure might contain six or seven kernels. Mellon seemed not to take into account modeled writing that would involve sentence cues, thus ignoring a long series of studies which utilize such cues in their audio-lingual approach to learning a foreign language and learning English as a second language. These studies, which will be discussed subsequently, surely involve some kind of modeled-writing pattern practice. And they have proven quite successful.

These are, perhaps, peripheral issues, but in developing a rationale for transformational sentence-combining practice, Mellon defended two assumptions which may be called to question and which are of prime concern to the present study. He repeatedly claimed that sentence-combining practice must be "a-rhetorical" in nature. He also asserted that

> the chief purpose of [the grammar] course was neither to rectify the student's language behavior nor facilitate the sentence-combining practice. . . . the problem-solving practice was considered an integral part of the grammar course and may be viewed in this light quite without regard for its possible effects upon syntactic fluency. (1969, p. 27)

The present study will take issue with both of these assertions in due course. However, it does agree with Mellon's other conditions for

efficient sentence-combining practice, namely, that the final behavior elicited from the student should be the production of a "fully formed statement whose structure is predetermined and characteristic of mature expression" and that the content must be given in a format that will facilitate the production of the desired sentence.

Sentence-Combining Practice Not Dependent on Formal Knowledge of a Grammar

However one may disagree with certain aspects of Mellon's rationale for transformational sentence-combining practice, one is faced with a hard fact. It worked. Mellon claimed that the combining practice was an integral part of the grammar study. The present researcher questions this claim. Mellon also declared that the combining practice must be a-rhetorical. Although this assertion is at least a matter for conjecture, and indeed it will be called to question later in this study, there can be no disputing the fact that Mellon's transformational sentence-combining practice was conducted in a largely a-rhetorical setting.

The rationale for the present study grew out of experiences the present researcher had in his senior secondary classes in his native Scotland, where he lived until he had completed an M.A. from Glasgow University. A favorite activity in Scottish English classes was an exercise which supplied the student with perhaps six or seven kernel-like statements and directed him to "write all of these as a compound-complex sentence with two adjective clauses, an adverb phrase, and two adverbial clauses, one of concession and one of place." Suppose, as often happened in this researcher's case, the wretched student did not know either what a compound-complex sentence was or what an adverbial clause of concession was. In a classroom environment where physical punishment for unsatisfactory work was an everyday occurrence and its avoidance an attractive alternative, the student would simply work with what he did know and use his intuition for what remained. And he was quite often successful in coming up with the correct answers. (Perhaps the "paddle" hasn't been sufficiently investigated as a sentence-combining stimulus!)

Years later this researcher chanced on the Mellon treatment and immediately set about solving the sentence-combining problems without benefit of Mellon's grammatical signals. It was a fairly difficult enterprise at first. But it wasn't long before "(T:rel)" became "who" or "which" or "that" and, more difficult, "(T:fact)" and "(T:exp)" combined to become "it . . . that." Aft that the hunt was on. Could all

of these grammar labels be eliminated and a series of practical "little helps" substituted? The advantages of this approach were legion. The students wouldn't have to study a grammar that, for seventh graders at least, was really quite difficult. This would eliminate any possible adverse effects of the grammar study on students who simply could not understand the *theoretical* constructs which, as has been previously shown, were not thoroughly taught in Mellon's treatment, but rather mentioned *en passant*. The simplicity of the instructions would allow the student to deal, unhampered, with concepts which language-development research has demonstrated he already has mastered. The complexity of the problems would not be reduced but could be faced square on. Success might breed success. Students don't like traditional grammar study, not only because it is boring, but also because many of them simply cannot do it. With grammar gone, the full potential of Mellon's kernel-embedding system might be realized.

It does not seem unreasonable to assume that, when they were writing out the sentence-combining problems, at least some of Mellon's students may have gone through an experience similar to this researcher's teenage experiences in Scotland. Although they might have had only a sketchy knowledge of the grammatical concepts, they probably had recourse to their own practical linguistic experience or, more likely, they flicked back in the text and found a combining problem, already solved, exemplifying a similar problem.

The sentence-combining practice in this study, while freeing the student from the distraction of seeking meaningful content himself, would give him systematic and controlled experience in the production of sentences which were more mature than those he would ordinarily write. He could give his undivided attention to the actual process of transforming by addition and deletion without worrying about grammatical theory.

John Mellon very graciously gave the present researcher permission to use and change his sentence-combining problems as he thought fit. The present study retained at least 95 percent of Mellon's sentences so that comparisons of the results could be made. Occasionally Boston area street names, sports arenas, etc., were changed to their equivalents in Tallahassee. Very little else was changed. Since some of the thirty extra five-minute daily exercises that Mellon's students worked on were not available, this researcher substituted an equivalent number of similar kinds of combining problems.

However, the present study incorporated very important changes in Mellon's format, and these changes were so important as to alter the very nature of the activities. This study is a replication of Mellon's

only in the sense that the students' final product was a series of similar sentences.

Mellon's students were exposed to the study of a transformational grammar throughout the year. They learned a series of transformational concepts which apparently facilitated the solution of the sentence-combining problems. To illustrate the form of his transformational sentence-combining problems Mellon used the following example that would appear in about the seventh month of the grammar course:

> *Problem:*
> The children clearly must have wondered SOMETHING.
> The bombings had orphaned the children.
> SOMETHING was humanly possible somehow. (T:wh)
> Their conquerors pretended SOMETHING. (T:infin–T:exp)
> Chewing gum and smiles might compensate for the losses. (T:fact)
> The losses were heartbreaking.
> They had so recently sustained the losses.
>
> *Write-out:*
> (Here the student writes the fully formed sentence.) (1969, p. 22)

Mellon explained the process like this:

> Briefly, the right hand indentations show how the embedding is to proceed. The first sentence is always the main clause. The sentence or sentences immediately beneath it and spaced one place to the right are to be embedded therein, and so on down the list of successively right-spaced sentences. The capitalized word "SOMETHING" indicates an open nominal position, repeated nouns signal relativization, and parenthetical items are abbreviated transformational directions where necessary. (1969, p. 23)

The present study abandoned entirely the formal study of grammar because grammar study was not needed. What was needed was a series of simple, consistent, practical, and efficient signals designed for the sole purpose of facilitating the sentence-combining operations. They had to be easy to understand and easy to use.

Right-hand indentations were abandoned because they also were not needed. Students could perform the combining operations without them. The capitalized word *SOMETHING*, which indicated an open nominal position, was retained because students found it easy to understand and very helpful. Students had trouble with the concept of a repeated noun signaling relativization. Instead, this researcher simply underlined the relative words that would be retained in the write-out. Students found this particularly helpful because all they had to do was to get rid of anything that was not underlined in that line.

A similar example should help the reader to compare and contrast

the two methods of facilitating the sentence-combining practice.

> The children clearly must have wondered SOMETHING.
> The bombings had orphaned the children. (WHOM)
> SOMETHING was humanly possible somehow. (WHY)
> Their conquerors pretended SOMETHING. (IT–FOR–TO)
> Chewing gum and smiles might compensate for the losses. (THAT)
> The losses were *heartbreaking*.*
> They had so recently sustained the losses. (WHICH)

The student, in both Mellon's and the present study, was instructed to move down the sentences, combining them as he went, into one sentence. If successful, he wrote it out as follows:

> The children whom the bombing had orphaned clearly must have wondered how it was humanly possible for their conquerors to pretend that chewing gum and smiles might compensate for the heartbreaking losses which they had so recently sustained.

Although additional illustrations are provided in Appendix A, there is really no substitute for a thorough examination of the gradual building up process that was an integral part of the present study.

The system employed in this study has some advantages over Mellon's system. A student doesn't have as many abbreviated grammatical instructions to keep in mind. For example, in Mellon's system, "(T:wh)" could mean "who," "what," "when," "where," or "why." The new system, as the reader can see from the example above, specifically tells the student to use "why," or "whom," or "which."

As every English teacher knows, students very often don't know when to use "who" or "whom." The repeated nominal doesn't help, but the new system virtually guarantees the correct form by telling the student which one to use. "(T:infin)" and "(T:exp)" are instructions for Mellon's students to use both the infinitive transformation and the expletive transformation. The new system's "(IT–FOR–TO)" takes the guesswork out and allows the student to confront the real issue—the embedding problem itself.

The new system is demonstrably easier because it focuses on the needs of the student. If the purpose of a sentence-combining instruction system is to facilitate the sentence-combining operation, then that is precisely what it ought to do. It should anticipate where the *student* will be likely to encounter a problem. And then it should help the student solve that problem right when he needs the help.

In preexperiment trials the students who worked on these problems found them quite interesting for several reasons. The most important

*The italicized word was underlined in the experimental text.

reason was that they were easy to do. They gave students confidence with sentence manipulation. A student had to test his answers against his own sense of grammaticality. Seeing in his mind's eye sentences "click together," as one student put it, as he moved down the kernels was a positive reinforcement of the sentence-combining process. Students were also impressed with the maturity of the write-out sentences and often claimed credit for them, referring to them as "my sentences." There was every reason to believe, then, that the students in the experiment would find these problems challenging and interesting.

The greatest attraction for both teacher and pupils of the system of sentence-combining practice described here is, of course, that it does not necessitate the study of a grammar, traditional or transformational. The English teacher who simply "doesn't like grammar" can use this system. Also, many English teachers, although attracted to transformational grammar in theory, are repelled by some of its very complicated rules, especially its tree diagrams. Others maintain that, because generative grammar is in its infancy and could quickly become obsolete, learning its many complicated rules could be a waste of their time. And, of course, many English teachers, troubled by grammar's demonstrable lack of utilitarian value, nevertheless feel that grammar study is an important part of human knowledge. All of these teachers can use the present system because it avoids the negative aspects of grammar study altogether.

Grammar study is in disrepute at the present time largely because it has failed to help students write any better. It has occupied the center of language study in the classroom, and many people, including some grammarians, think that this is regrettable. In a lively article called "Linguistics and the Pursuit of Relevance" Neil Postman suggested that the grammarian and his works should be placed "at the distant periphery of language study, not at its center" and that "the primary goal in language teaching is to help students to increase their competence to use and understand language" (1967, p. 1162). He denounced the idea that language should be studied "for its own sake," and then asserted that a very important goal in the teaching of English is "helping students to manage their lives more effectively by increasing their control over language" (p. 1162). Postman quoted I. A. Richards, "America's greatest living linguist," in an article in *The New York Review of Books*. Writing of the general failure of teachers to make the study of language relevant and useful, Richards said:

> It was *not* the badness of the grammar descriptions which caused the failure but a simpler and deeper mistake: learning how to describe a

> language is not at all the same as learning how to *use* it with power and discernment. In point of fact, current efforts by English teachers to use transformational grammar far too often result in glib manipulation of nomenclature—just as of old—and play with "tree diagrams" without bringing any improved understanding of what sentences do or how they do it. (Postman, 1967, p. 1162)

Richards and Postman clearly identified the problem. English teachers have been too concerned with how language works and not sufficiently concerned with developing ways to help students use their language. Obsessed with theory, they have ignored practice. Michael Scriven, in a speech delivered to the College of Education faculty at the Florida State University, called this tendency the "academic fallacy" and gave as an absurd example the view that "one can't swim without having a satisfactory theory of hydrostatics, hydrodynamics and the physiology of immersed activity." He suggested that the serious examples of the "academic fallacy" are built into our curriculum; "at the college level, for example, the laughable idea that symbolic logic is a significant aid to reasoning skill in any substantial field, that French grammar has something important to contribute to French-using skills. . . ." Aren't English teachers also guilty of the academic fallacy when they stress *why* to the detriment of *how*?

Richards, Scriven, and Postman all stressed the importance of the *use* one makes of a skill. And that is precisely what sentence-combining practice is designed to do—to make students better able to handle English sentences. Of course, there was no suggestion here that the students would write in their free writing sentences as long as those they practiced. What was postulated in this study was that there would be a sort of "rub-off" effect from sentence-combining practice with multiple embeddings which would lead to greater syntactic maturity in free writing. Football players practice hundreds of plays many times so that at the right time, in the right situation, a dozen or so of these moves will have become both appropriate and habitual. So also with sentence combining. Only some of the operations should become habitual.

A further attraction of sentence-combining practice is that it forces the student, as he embeds the given kernels into the main statement, to keep longer and longer discourse in his head. Practice at memorizing and reproducing these longer sentences may help him develop a skill which two researchers at least have claimed is characteristic of increasing cognitive maturity. Harrell (1957) discovered that younger children write shorter sentences than they speak and his evidence suggests that older children are better than younger children at learning

to keep sentences of increasing length in their heads while writing them out on paper. Support for Harrell's contention can be found in the theory of "chunking" which Miller (1956) developed. Miller suggested that as the mind matures it develops a more sophisticated ability to organize complex information. According to Hunt, this developing ability would explain why children, as they mature, produce and receive more complex sentences (1970, p. 58). Miller's explanation of how the memory span, which is a fixed number of chunks, can handle additional information by building larger chunks containing more information than before is an attractive one and would appear to support the kind of sentence-combining manipulations being advanced in the present study. Miller declared that

> In the jargon of communication theory, this process would be called recoding. The input is given in a code that contains many chunks with few bits per chunk. The operator recodes the input into another code that contains fewer chunks with more bits per chunk. There are many ways to do this recoding but probably the simplest is to group the input events, apply a new name to the group, and then remember the new name rather than the original input events. (1956, p. 93)

Obviously Miller's description of the recoding process is very similar to the series of operations demanded by the sentence-combining practice in the present study. "Bits of information" are very like kernels which have to be embedded, and "chunks" are similar to relative and nominal kernel embeddings. The long T-unit is, therefore, the result of the reduction and embedment of bits of information into chunks which naturally become larger.

The case for this study's sentence-combining practice is a strong one both from a practical and a theoretical standpoint. It should facilitate syntactic skills already possessed by "training" the memory and increasing the cognitive "chunking" ability of the students. The system is simple and can be learned by the average English teacher in several inservice sessions. Because it demands an acceptant, non–error-oriented environment that accentuates the positive, students should find it easy to do and relatively interesting. Few students should make many mistakes.

Curricular Assumptions

The present experiment presented an interesting curricular dilemma. Although the sentence-combining practice was presented in an a-rhetorical setting because of design requirements, this experimenter is not at all convinced that that is the only or even the best method

of presenting sentence-combining practice. In order to isolate the effect of sentence-combining practice, the exercises were given to the students in a carefully structured and almost entirely a-rhetorical setting. Great pains were taken to avoid conditioning students to favor complex syntactic expression in their actual composition classes.

At least one-half of the regular composition course for all students consisted of the students writing a journal each week, with the stress in this part of the course on encouraging students to develop a sense of personal worth. The uniqueness of the individual and the importance of the day-to-day happenings in the life of that individual were of paramount importance. Sentence structure, punctuation, spelling, etc. were largely ignored. The major responsibility of the teacher was to react as another human being, as sympathetically as possible, to the searching, the joys and disappointments, the uncertainties, the probing of the individual student. Content was all important. The major objective was to get the students to increase the flow of their writing and in so doing to improve their self-concepts.

The sentence-combining problems were never referred to in the composition class. In fact, they were systematically avoided. Had the sentence-combining practice been presented in concert with or as an integral part of the composition instruction, major problems of interpretation of the results would doubtless have arisen. In such a situation, if the students' writing behavior had changed significantly, perhaps the change could be attributed to the unique effect of sentence-combining practice *and* composition instruction.

This is not to say that sentence-combining practice *ought* to take place in an a-rhetorical setting. Indeed, the present researcher strongly believes that sentence-combining practice has very real attractiveness when considered as an integral part of composition instruction because (1) it has such a direct bearing on the generally neglected question of style and (2) it has potential usefulness for the student who is revising a paper which has been condemned for an immature or choppy style, quite without regard to its effectiveness in the present experiment.

Mellon (1969) believed that secondary school English should consist of "three autonomous component subjects—literature, composition, and linguistics" and that "linguistics and composition are separate subjects in pursuit of separate goals." This position is at best questionable. Since the Anglo-American Seminar on the Teaching of English held at Dartmouth College in 1966 there has been a discernible movement among English educators away from the tripartite division of the English curriculum, and the present researcher is certainly in favor of

such a trend. However, no useful purpose would be served by embarking on a lengthy discussion of the relative merits of these two seemingly opposing views because the design of the present experiment necessitated the isolation of sentence-combining practice from the rest of the curriculum so that its effect on student writing could be directly measured. The whole question as to whether sentence combining must be, as Mellon claims, "a-rhetorical" (p. 20), whether it has "nothing whatsoever to do with . . . the teaching of writing" (p. 81), and whether it is "not a program of composition or rhetoric" (p. 74), will be returned to in the last chapter of this study, where the general curricular implications for the sentence-combining practice described here will be discussed at length.

Summary

The first part of this chapter demonstrated that growth in syntactic maturity can be measured in quantifiable terms and that the six factors utilized in the present study constitute a reasonable measure of syntactic maturity.

The second part of the chapter both described and developed a rationale for the present study's system of sentence-combining practice. Sentence-combining practice that was in no way dependent on the students' formal knowledge of transformational grammar should increase the normal rate of growth of syntactic maturity in the students' free writing. Practice with intensive sentence manipulation that involved multiple embedding of kernels supplied in advance and the final development and production of sentences considerably more mature than normally written and spoken by such students should result in an enhanced cognitive ability to produce sentences that are syntactically more mature.

Non–error-oriented, grammar-study-free, and wholly dependent on each individual student's inherent sense of grammaticality, the sentence-combining practice virtually guaranteed student success, and success should produce a positive, acceptant classroom atmosphere that, in stressing the spirit of inquiry, would encourage syntactic experimentation and build confidence. The dais might disappear; the student as syntactic authority take over. At least a part of linguistics could more nearly become "student-centered"—certainly a desirable curricular development.

CHAPTER 3

DESIGN AND PROCEDURES

The overall plan of this study was to test whether sentence-combining practice that was in no way dependent on the students' formal knowledge of transformational grammar would increase the normal rate of growth of syntactic maturity in the students' free writing in an experiment at the seventh grade level over a period of eight months. In this experiment subjects were randomly assigned to the experimental and control groups. Samples taken from pre- and post-treatment compositions were used as a basis for determining syntactic maturity. The amount of growth experienced by an experimental group was compared with that of an equivalent control group and where possible, with the normative data reported by Hunt (1965), O'Donnell, et al. (1967), and Mellon (1969). With the obvious exception of the sentence-combining practice, the experimental group was exposed to the same kinds of units as the control group. The experimental units were simply shorter. Both the experimental and control group wrote the same number of compositions, plays, speeches, etc.

An evaluation of the overall writing quality of a subsample of the total sample's writing output was also undertaken to determine whether the actual growth in syntactic maturity experienced by the experimental group would influence the judgments of a group of eight experienced English teachers called upon to compare the overall quality of matched pairs of a sample of the experimental and control compositions.

Hypotheses

The study was designed to test the following two major hypotheses for significance at the .05 level:

1. The experimental group, which was exposed to the sentence-combining practice, will score significantly higher on the six factors of syntactic maturity than the control group, which was not exposed to the sentence-combining practice.
2. The experimental group will write compositions that will be

judged by eight experienced English teachers as significantly superior in overall quality to the compositions written by the control group.

This study also tested for possible interaction effects of teacher, sex, and ability as measured by IQ and pre-test scores on words per T-unit on the syntactic maturity of the students' writing.

Since the subsample of the compositions written consisted of fifteen pairs of narrative and fifteen pairs of descriptive writing, this study tested whether the eight teachers judged the narrative and descriptive compositions differently. Also of interest was whether the teachers as a group agreed in their evaluations of these compositions.

Research Design

Design of the Study. The experiment was designed to include two experimental and two control classes to which students were randomly assigned. The pre-test–post-test control group design described by Campbell and Stanley (1968, p. 13) was utilized. The design took the following form:

R O X O
R O O

Subjects. All of the eighty-three seventh grade students at the Florida State University High School were included in the study. These students were within the normal seventh grade range of 12 to 13 years and had IQ scores ranging from 76 to 143 with an average of 111.6. Thirteen percent of the students were black. There were forty-three boys and forty girls in this predominantly middle class population. There were forty-one students in the experimental group and forty-two in the control group.

Variables. The following outline summarizes the independent, dependent, and extraneous variables of this experiment.

I. Independent.
   Methods and materials: teaching a regular curriculum in English versus sentence-combining practice and a shortened version of this regular curriculum.

II. Dependent.
   A. Six factors of syntactic maturity.
      1. Words per T-unit.
      2. Clauses per T-unit.
      3. Words per clause.
      4. Noun clauses per 100 T-units.

5. Adverb clauses per 100 T-units.
6. Adjective clauses per 100 T-units.

B. A single qualitative judgment, based on the factors of ideas, organization, style, vocabulary, and sentence structure, made concerning which of two compositions, one experimental and one control, was superior. (The superior composition was assigned a score of *one* and the other composition was assigned a score of *zero*. The compositions had been matched according to the subjects' sex and IQ.)

III. Extraneous.

A. Language experiences of the subjects outside their English classes.

B. The two teachers who each taught an experimental and control class.

Procedures

Selection of the Experiment Population. The seventh grade was selected as the level on which to conduct this experiment simply because Mellon chose seventh graders. An important design feature of this experiment was that the experimental group was required to write out sentences virtually identical to those written out by Mellon's experimental group. The advantages were obvious. Should the experimental group not achieve the growth hypothesized for it, an interesting question would arise concerning Mellon's study. Mellon claimed that his experimental group's growth was the result of the combining practice. Although common sense suggests that Mellon was correct, it is nevertheless possible that it was some unique combination of transformational grammar and sentence combining that led to the increase in "syntactic fluency."

If the present study's experimental group were to achieve significantly more growth in syntactic maturity than the growth achieved by Mellon's experimental group, another equally absorbing question would arise. Both groups would have experienced similar amounts of "combining" practice which, Mellon claimed, made the difference. How to account for the differences? Perhaps the grammar studied by Mellon's group, because it was more difficult than Mellon imagined, acted as an inhibiting agent on the sentence-combining practice done by his students. Equally interesting problems would arise if the experimental groups in both studies achieved approximately equal increases in syntactic maturity or fluency. This whole question will, of course, be returned to when the results of the present study are examined in the last chapter.

No claim is being made for the unique suitability for seventh graders of the sentence-combining practice described in this study. Indeed, it is the present researcher's opinion that oral sentence-combining practice could begin in the second grade and, perhaps, in written form in grade four. While the number of kernels to be embedded, their vocabulary and comprehension levels, and the cognitive-syntactic maturity of the children would obviously be of paramount importance to the curriculum writer, the arguments already cited for the attractiveness of the present study's sentence-combining practice would appear to retain their validity. Grammar-free sentence-combining, capitalizing on syntactic abilities that students already possess and conducted in an acceptant atmosphere in which students are the final arbiters of acceptability, should prove successful in elementary as well as in secondary schools.

Schoolwide scheduling constraints dictated that the seventh grade consist of four classes containing respectively seventeen, eighteen, twenty-four, and twenty-four students and that two of these classes meet at the same time. Fortunately, the administration was able to accommodate a request for all the classes to meet during the first three periods of the day. Also, the experiment population remained fairly stable. During the year only two students left Florida High, one each from an experimental and control class, and one student entered a control class in January, halfway through the academic year. Naturally, these students' inputs were not included in the final tabulations. The experiment population thus consisted of a total of eighty-three students.

Schoolwide scheduling constraints also necessitated this researcher's teaching two of the four seventh grade classes. It would have been more desirable to have had a teacher other than the present researcher conduct these classes. But since this was simply not feasible, it was decided that Mr. James Barnes, English Department head at Florida High School, would take the larger of the experimental classes (24) and the smaller control class (18), while this researcher would take the smaller experimental class (17) and the larger control class (24). In this manner the teacher-treatment influence was controlled to some extent.

Control of Outside Language Experiences. There was no practical way to control for the language experiences of the subjects outside their English classes. However, conversations with their social studies and science teachers in particular made it clear that, as might be expected, the students as a whole were given roughly equivalent writing and discussion assignments both in school and at home. An important and highly structured part of the subjects' English course was an almost

overwhelming emphasis on the importance of free reading. Students were encouraged to read as much as possible at home and were given approximately one day per week of in-class time in which to read books they themselves had chosen. The number of books read by students was highly gratifying, but there was no evidence of an appreciable difference in the number read by experimental or control classes. Although stringent efforts were made to ensure that the subjects were given identical writing assignments in their composition and literature classes, there was no way to directly control their extracurricular writing experiences. However, random assignment of subjects to the respective treatments, for which a book of random numbers was used, presumably would control for such extraneous factors.

The Treatments. In the spring of 1969 the English Department at Florida High decided to concentrate heavily on reading instruction in the seventh grade and to spend about one-third of the year on the teaching of reading skills and free reading, which entailed allowing students to read a book of their choice in class for an hour at least once per week. In addition, it was decided that two short units in literature would also be presented, as would units in composition, dramatics, library skills, and language study.

When permission was later granted for the present study to be conducted, plans had to be made to accommodate both an experimental and a control treatment. Since there were excellent curricular reasons for retaining the "spring" plan and no design problems requiring that plan's alteration, it was decided that the control group would study the units already outlined. The experimental treatment would consist of shortened versions of each of the units mentioned, as well as the unit on sentence-combining practice. For example, in examining the concept of fiction, both groups read and discussed a number of short stories. While the control group worked with five short stories, the experimental group studied just three.

The control group did not study any kind of grammar because previous research, including Mellon's own study, suggested that the systematic teaching of formal grammar, as Neil Postman (1967) so aptly put it, "does very little or nothing or harm to students . . ." (p. 1162). One of the outstanding observations in the Mellon study (1969) was that the practice sentences studied by his control group in their study of formal grammar

> represented immature types which junior high school composition teachers rightly exhort their students to avoid, although the experimenter finds without exception that all widely used seventh grade texts are limited to these puerile sentence types . . . (p. 38). [These stu-

> dents] experience and perhaps emulate sentences far below their attained level of syntactic fluency. (p. 39)

Therefore, because of what Mellon called "their manifest undesirability," these sentences and the grammar study that requires them were systematically excluded from the control treatment.

The literature units studied by the control group concentrated on literary "forms"—fiction, with a heavy emphasis on the short story; nonfiction, stressing biography; and poetry, with an accent on modern works. The texts for these units were the following:

> *Adventures for Readers Book I*, by Elizabeth C. O'Daly and Egbert W. Nieman (New York: Harcourt Brace Jovanovich, 1958);
> *Vanguard*, by Robert C. Pooley, Virginia Belle Lowers, Frances Magdanz, and Olive S. Niles (Glenview, Ill.: Scott, Foresman and Co., 1967);
> *Perspectives*, by Robert C. Pooley, Alfred H. Gromman, Frances Magdanz, Elsie Katlejohn, and Olive S. Niles (Glenview, Ill.: Scott, Foresman and Co., 1963); and
> *Reflections on a Gift of Watermelon Pickle, and Other Modern Verse*, by Stephen Dunning, Edward Lueders, and Hugh Smith (Glenview, Ill.: Scott, Foresman and Co., 1966).

The control group's dramatics unit consisted of individual and small group improvisations, and the selection, rehearsal, and presentation of student written and professionally written plays of proven popularity with seventh graders. Everyone wrote a short play. The best play in each group was chosen by the group who set about rewriting, polishing, and finally presenting it to the rest of the class. Although the literary and aesthetic quality of the student plays was, to say the least, uneven, the students obviously had fun.

The reading course began with a heavy, four-week concentrated dosage in September and continued sporadically throughout the year. Students worked on an individualized basis at their own speed on a large variety of materials. Materials were provided for every reading level from second grade through college. These consisted of:

> *SRA Reading Laboratory IIIa*, by Don H. Parker (Chicago: Science Research Associates, 1964);
> *General RFU Reading for Understanding*, by Thelma Gwinn Thurstone (Chicago: Science Research Associates, 1969);
> *The Macmillan Reading Spectrum* (New York: The Macmillan Company, 1965);
> *Reading Skill Builders* (Pleasantville, N.Y.: Reader's Digest Services, 1960);
> *The Literature Sampler: Secondary Edition*, by Rita McLaughlin (Chicago: Learning Materials, 1962); and

An extensive classroom library of approximately one thousand paperback books covering grades 3 through 12.

The "free reading" dimension of the reading course was regarded as much more important than its skill-building counterpart.

Students were both required and encouraged to read as much as possible both in class and at home. A "points" system that this researcher had used for five or six years in previous schools was instituted. A certain number of points were given for each book read by the student who reported on a three-by-five card. The points were allocated according to the number of pages, the size of the print, and the reading ability of the student. Because an able student might be given only three points for a book that a less talented colleague had been given five points for, both students would have to work at close to capacity to satisfy the stipulated minimum requirement. Extra credit was of course given to students who surpassed this minimum. The physical proximity of the books, the provision of free *in-class* time for reading, and constant book sharing experiences on a formal and informal basis with large and small groups all combined to create a highly satisfactory unit, according to an unsigned class-wide evaluation of that unit conducted in June.

The control group's language study unit consisted of teacher-made study sheets and exercises on vocabulary study, dictionary skills, punctuation, capitalization, and usage. Spelling was not taught systematically but was attended to on an individual basis in the students' work in composition.

The control group's composition course was divided into two separate sections. The first consisted of "journal" writing. Students were required to write two pages per week as a minimum with a maximum of four pages. It had been our experience with the majority of seventh graders in previous years that they found writing a burdensome chore. The journal writing was designed first of all to get them to write anything at all. Writing is, among other things, a physical act, and, as with most physical acts, practice is a necessary step on the road toward competency. Students were encouraged to write about themselves, about their hopes and aspirations, their doubts, their frailties, their pet hates, their favorite singers, their parents, their friends: anything and everything that pertained to their lives. Worthwhile writing usually stems from sincerity and commitment and relevance. Their teachers ceased to be "English" teachers and, instead, tried to be sympathetic "listener-readers." Students wrote only on right hand pages so that their teachers could respond and react on the left hand pages. Handwriting had to be legible—barely. Spelling was largely

ignored along with punctuation and other mechanical considerations. The focus was unremittingly on content. Students were encouraged to complain if their teachers didn't respond in writing enough. Of course, all the communications in the journal were held in the strictest confidence. A student could fill his two pages and then, if he so desired, forbid his teacher to read them by labeling the first page "DO NOT READ" and by putting a line through both pages, bottom left to top right. Although very few students had recourse to the "DO NOT READ" command, they obviously liked the idea that they *could*. We felt this was an excellent writing unit; so did the students.

These same students were not so enchanted by the second half of the composition unit, in which prewriting was stressed. Ideas, organization, style, mechanics, and spelling were discussed and graded for. Students were given an opportunity to write narrations, descriptions, and expositions. They were unimpressed. "Why can't we write journals? *That* was fun."

The experimental group was exposed to all of the units described here. Their units were simply shorter. They worked on fewer exercises in their language study and read only one biography instead of the two read by their control counterparts. Their reading course was shorter, as were their literature units. In dramatics they had less time to work on their plays and presented only one play on stage. They were given less instruction in composition. However, they wrote exactly the same number of compositions as the control group, and they wrote an identical number of assignments in their literature study.

The experimental group worked on nineteen lessons which taught sentence-combining techniques and provided abundant practice in sentence combining. The text was called *Sentence Combining* and contained 111 pages of text and exercises. The students were directed, workbook fashion, to write all the required exercises directly on the pages of the text. The students used ring binders to keep the lessons distributed to them during the year. The ring binders were kept in the classroom so that they could be checked. When homework was assigned, the students took home only the relevant lesson sheets.

A deliberate attempt was made to keep the text as brief as possible. Explanations of particular sentence-combining techniques and illustrative examples seldom went beyond half a page. The students rarely needed help with any of the lessons. Working with the actual sentence-combining problems consistently removed any difficulties encountered by the students.

The sentence-combining treatment lasted an average of one hour and a quarter per week in class, and the students spent about half an

hour per week on related homework assignments. These weekly totals are averages because sentence combining was interspersed with whatever other units were being taught. Students who completed their sentence-combining assignments early were also encouraged to read their novels in class. The students obviously enjoyed free reading, and this helped to keep the sentence combining interesting by association.

The first part of the sentence-combining text gave students practice in writing out simple sentences by matching separated subjects and predicates. (It is important to remember that although these procedures are being described for the reader in grammatical terms, such terms were *never* used in the lessons.) Then the students were given practice with the addition of adverbial phrases to sentences. This was followed by a series of short lessons giving students practice in converting sentences to negatives, questions, and passives. Here are a few examples which instructed the students to use a variety of the combining signals they had learned. Where appropriate, the desired answer is written out as sentence B.

A. The rattler (HOW) slithered (WHERE), bit the sleeping baby (WHERE), and (HOW) disappeared.

Instructions: In the following exercise write out as many sentences as you can, using *all* of the information.

A. My car broke down.
My car broke down during the winter.
My car broke down every Monday morning.
My car broke down at five o'clock.

A. Some telephones are nearby. (THERE-INS + NEG + QUES)
B. Aren't there any telephones nearby?

A. Those dirty marks will fade away for some reason. (NEG + WHY QUES)
B. Why won't those dirty marks fade away?

The second part of the sentence-combining text required students to master single-embedding problems. For example:

A. Peter noticed SOMETHING.
There were nine golf balls in the river. (THAT)
B. Peter noticed that there were nine golf balls in the river.

Lesson Thirteen presented a particularly difficult problem for this researcher. What combining signal would, in non-grammatical terms, enable students to convert an adverb to an adjective and change its position in the transformed sentence? For example, how to get students to change "The child shivered violently" to either "The child's violent shivering . . ." or "The violent shivering of the child . . ." so that

either could be inserted in another sentence? The solution was so obvious that it eluded this researcher for a long time. Almost every adverb, when changed to an adjective, drops *ly*. Therefore, the parenthetical command (⋈) was called "LY with the cross through it" in the lessons. The student followed the (⋈) command and positioned the new word according to where it appeared in parentheses. For example,

A. The child shivered violently ('S + ⋈ + ING)
B. The child's violent shivering. . . .

A. The child shivered violently (⋈ + ING + OF)
B. The violent shivering of the child. . . .

The single-embedding problems were followed by multiple-embedding problems that required the students to transform and embed two, three, four, or more kernel sentences into a single sentence. For example:

A. SOMETHING should tell you SOMETHING.
John has not called in five days. (THE FACT THAT)
You are not going steady anymore. (THAT)
B. The fact that John has not called in five days should tell you that you are not going steady anymore.

Illustrative sentence-combining problems can be found in Appendix A.

The present researcher did not perform an actual count of the different forms of practice exercises because his exercises were virtually identical to those of Mellon, who performed that very laborious count. Mellon stated that the 904 kernel sentences used in the sentence-combining problems were presented in such a way that their proportions would be approximately equal to the proportions of transform types found in normal eighth grade writing. Mellon's 602 exercises consisted of 123 pretransformational basic sentences, 130 simple transformations, 68 separate complex transformations and 281 sentence-combining problems, with 98 single-embedding problems and 183 multiple-embedding problems. Generally speaking, then, the present study exposed its experimental students to a roughly equivalent number of problems.

A very important and perhaps crucial dimension of the experimental treatment was the nature of the classroom activities and the atmosphere in which the combining practice was conducted. Historically, usage and grammar drills have been negatively oriented, concentrating on errors instead of building confidence. Students learned to think in terms of "red ink" teacher comments. Especially at the beginning of this study, there was almost no concern at all with error. A student who perhaps had produced a good English sentence but not the one desired in the exercise was rewarded with an approving smile or nod. "That's a good

sentence, John" or a similar comment always accompanied the teacher's reaction to the exercise error. Most of the students needed a feeling of assurance, a sense of predictable success when they were faced with a sentence-manipulation problem.

In the first few lessons the teacher was the center of the activities. But not for long. Since students who depend exclusively on the teacher to decide whether a sentence is acceptable or not are unlikely to develop the confidence necessary for success in sentence combining, it was decided to structure the teacher out of the remaining lessons. The teacher deliberately sat down when the classes were going over their sentences. If a student read out a sentence to which any member of the class objected, the class as a whole decided by a show of hands whether they agreed or disagreed with the complaint. Students discussed the issues raised and students decided on a sentence's suitability. Only if there was no clear majority did the teacher step in with a hint or two. Indeed, if the majority decided that a particular sentence was acceptable and the teacher did not agree, it was decided to let the majority vote carry the day. One questionable sentence was of little importance when compared to the evident satisfaction the students derived from overruling their teacher. Producing sentences that were intellectually satisfying and grammatically correct most of the time gave the students the desired confidence and a positive attitude towards sentence production.

In addition to writing out every sentence, the students practiced choral readings of approximately one-third of the completed sentences. This was usually performed in a very relaxed atmosphere where a reasonable amount of student clowning was not frowned upon. Sometimes the exercises were gone over in small groups whose population was constantly changed. Often students volunteered to run the lesson and supervise any discussions. Generally speaking, a variety of techniques was consciously and very deliberately used to keep the exercises interesting. The length of the lessons ranged from ten to forty minutes. When the exciting dramatics unit began in January, the students seemed reluctant to get back to the combining exercises, claiming that they were too busy with their free reading, which was beginning to catch on then, and their play acting and writing. The teachers decided to postpone the sentence combining until the first week in February. This was a wise decision, for the students returned to it with a revived interest and enthusiasm that they never again lost.

Strenuous efforts were made to expose both the experimental and control classes in the experiment to the same kind and variety of classroom procedures. The experimenter discussed strategies with Mr.

Barnes on a systematic weekly basis, and both teachers visited each other's experimental and control classes periodically throughout the year.

Measurement

Ability. The students' ability was measured by the California Test of Mental Maturity (IQ scores, mean 100, SD 16) and by their score on words per T-unit calculated from the first ten T-units in each of the five pre-treatment compositions that they wrote.

Syntactic Maturity. In order to measure the syntactic maturity of the subjects' free writing, it was necessary to obtain a representative sample of that writing. Studies have shown that a writer's performance can vary because of day-to-day fluctuations and because of the mode of discourse. Kincaid (1953) discovered that, at least with college freshmen, the day-to-day writing performance of individuals varies, especially that of better writers. Anderson (1960) found that 71 percent of the fifty-five eighth grade students he examined on eight different occasions "showed evidence of composition fluctuation" and concluded that a writer variable must be taken into account when rating compositions for research purposes. Frogner (1933), Seegers (1933), and Hunt (1964) have shown that a writer's sentence structure is affected by the mode of discourse he is using—argumentation, exposition, narration, or description. Clearly, then, the topic and mode of discourse should be varied.

There have been no definitive studies done on ideal sample size. Chotlas (1944) discovered that 1000-word samples written by junior high school students were as reliable as 3000-word samples. Anderson (1937) showed that the 150-word samples used by LaBrant were unreliable and suggested samples several times larger. O'Donnell and Hunt (1970), used a 300-word sample for the writing of fourth graders. Using a method similar to O'Donnell and Hunt's, the present researcher sampled 10 percent of the pre-test compositions of his experiment population. Words per T-unit, the most sensitive measure of syntactic maturity in school children, was used to determine a reliable sample size. It was discovered that a sample just over 400 words in length was as reliable an indicator of average T-unit length as was a 1000-word sample. Since Hunt's eighth grade students wrote T-units approximately 11 words in length, it was decided to collect per-student samples fifty T-units in length of pre- and post-treatment writing. Hopefully this would result in samples approximately 500 words in length.

Since it was desirable that the students' compositions represent their

own writing ability, all of the compositions at pre- and post-tests were written in class under teacher supervision, thus eliminating potential help from parents or friends. Teachers distributed the printed topic sheets and read aloud the information contained in them while the students read them silently. All of the students were supplied with lined legal-size paper. No attempt was made to influence the students to adopt an unnatural writing style, nor were they told that their sentence structure would be singled out for analysis. Indeed, they were never told that this was an experiment. The topic sheets were labeled "7th Grade, Composition Evaluation." In October the students were told that these compositions would be examined to help their teachers plan a composition program based on their particular needs. They were not told that they would be examined again in May. The post-test compositions were presented as an evaluation instrument to see how much they had improved their writing ability since the start of the school year. The students were encouraged to write rough drafts and to revise their sentences in any way they thought fit. The compositions were written during the first two weeks in October and the last two weeks in May.

The students in Mellon's experiment wrote nine pre- and post-test compositions. While a variety of modes of discourse was desirable, it was thought that this was an excessive amount of writing considering the fact that it was conducted in an environment where no composition instruction took place. Some students might have asked themselves how the teacher could grade nine compositions for each student right at the end of school. This researcher rather arbitrarily decided that five compositions were as many as the students would tolerate and therefore five topics were devised in consultation with Mr. Barnes. Following Mellon's methodology, each topic was represented in parallel A and B forms. Students who received one of these forms in October were given the other form in May. To avoid any systematic bias, half of one class were given the A form, the other half the B form. The process was reversed at the post-test so that half of both the experimental and control groups were writing on the same topics at any given time. The topics ranged over the three modes of discourse—narration, description, and exposition. Forms A and B of the five topics can be found in Appendix C exactly as they were given to the students.

The student writing was segmented and analyzed by the experimenter. The first ten T-units from each of a student's five compositions comprised the sample of fifty T-units per student per test.

The following are the rules used to segment each student's writing into T-units: one main clause plus any subordinate clause or nonclausal

structure that was attached to or embedded in it counted as one T-unit. Fragments which resulted from the omission of a word counted as a T-unit. The experimenter supplied the missing word. Other fragments were discarded. Unintelligible strings of words, referred to by Hunt (1965, p. 6) and O'Donnell, et al. (1967, p. 39) as "garbles," were discarded.

A very real difficulty arose when directly quoted discourse introduced by such an expression as "He said . . ." was encountered. Mellon discarded the "speaker tag." This experimenter was unhappy with such a procedure because it soon became difficult to define the expression "speaker tag." There is no great loss when an expression like "He said" is discarded. But what about the following example encountered in the analysis: "Clutching the knife tightly in his bleeding hand, Joe painfully crawled towards the opening and said, 'I surrender.'" Exactly what is the speaker tag here? Technically speaking, it would include every word from "Clutching" to "said." Surely this is not a two word T-unit with a sixteen-word speaker tag discarded!

Hunt stated that "there is some reason, then, to tabulate direct discourse along with noun clauses" (1965, p. 75). It would be easy to imagine directly quoted discourse consisting of a dozen sentences. Counting all of them as noun clauses would also be unsatisfactory. A compromise was reached by counting the first expression after "He said" as a direct object, because it seemed to satisfy the minimally terminable requirement for a T-unit. For example, the following discourse—

> Marsha said, "I really like you, John. However, Clarence's father is a millionaire and I like the idea of Palm Beach."

—would have been segmented into three T-units—between "John" and "However," and between "millionaire" and "and." The advantage of such a procedure was that it retained as much of the student's original writing as possible.

Mellon counted clauses of condition, concession, reason, and purpose as separate T-units because he believed that logical conjunctions behave much like coordinate conjunctions. In addition, he discarded clauses with repeating predicate phrases because he claimed they were elliptical and therefore vacuous. This experimenter remained unconvinced by Mellon's reasoning in either case and, therefore, retained Hunt and O'Donnell's simpler and more convincing methodology.

If a student failed to produce ten T-units in any composition, the shortage was made up by segmenting extra T-units written in his other compositions. Since the compositions were numbered from one

to five, the search for "extra" T-units always began with the first composition and proceeded until the shortages were eliminated. A few students failed to produce the required fifty T-units. It was not felt that this shortage compromised the adequacy of the sample because all of the computations were either converted to a base of one hundred T-units or expressed as a ratio of a certain number of words per T-unit or per clause.

In this experiment the six factors of syntactic maturity were calculated in the following manner:

Words per T-unit. This figure was obtained by dividing the number of words by the number of T-units. Compound nouns written as one word counted as one word. Compound nouns written as two words and hyphenated word pairs counted as two words. Phrasal proper names counted as one word. Dates like *June 21* or *July 2* counted as two words. Contractions such as *he'd* or *shouldn't* counted as two words.

Clauses per T-unit. This figure was obtained by dividing the number of subordinate and main clauses by the number of main clauses.

Words per clause. This figure was obtained by dividing the number of words by the number of subordinate and main clauses.

Noun clauses per 100 T-units, adverb clauses per 100 T-units, and adjective clauses per 100 T-units. These figures were obtained by dividing the total number of each type of clause by the number of T-units, quotient times 100.

The T-unit segmentation and the frequency counts were performed by this experimenter, who conducted a systematic series of spot checks and also rechecked every T-unit longer than fifteen words.

Writing Quality. An evaluation of the general quality of the compositions written by the experiment sample was clearly desirable. But several problems presented themselves. This researcher had neither the time nor the resources to arrange for the evaluation of all the compositions written. A further difficulty was the notorious unreliability of composition ratings. And there was also the problem of securing the services of a sufficient number of experienced evaluators for a satisfactory length of time to do the job properly.

With these problems very much in mind, it was decided that the system of forced choices between matched pairs of compositions would be utilized. Members of the control group were listed and numbered in ascending order of IQ for both boys and girls. A similar list was compiled for the experimental group. A subject was randomly chosen from the control group and a subject of the same sex and approximately equal IQ (within three or four IQ points) was chosen from the experimental group to make up a matched pair. Thirty matched pairs of sub-

jects, comprising sixty compositions in all, were secured in this fashion.

Although the students had written five pre- and post-treatment compositions, it was decided that only the post-treatment compositions would be evaluated since we were primarily interested in the two groups' post-treatment writing ability. The most typical writing taught in seventh grade and the modes of discourse which seventh graders are apparently happiest with are narration and description. Therefore, Composition 1, a narration, and Composition 2, a description, were chosen as the compositions to be evaluated. The matched pairs of subjects were then divided into high and low according to IQ and assigned in balanced form to achieve approximately equal numbers of the same sex and ability level, fifteen to each of the two compositions.

For the purposes of the present experiment the system of forced choices of matched pairs had several advantages over a rating scale. It enabled a direct one-to-one comparison to be made of the experimental and control group's writing, which was of course the major purpose of the evaluation. It had the further advantage of being very easy to administer. Also, the evaluator's task was made much simpler. There was no need for him to read a decent sample of all the compositions before deciding what precisely a 3, for example, meant in a 1-to-5 rating scale. He seldom needed to read a composition more than once. And he had only to decide which composition was, in his opinion, better than its partner. This could be accomplished rapidly and efficiently. Braddock (1963) warned that "fatigue may lead raters to become severe, lenient or erratic in their evaluations . . ." (p. 11). Since all eight evaluators easily completed the task within one hour, the fatigue question never arose. The evaluators were eight experienced English teachers who were attending Florida State University during the summer in 1970. All of the teachers volunteered for the project. Table 2 gives a brief idea of the length and type of their teaching experience. The average teaching experience of these five females and three males was just over six years. Of course, these evaluators had no knowledge of the nature of the present experiment. They were simply told to make a single judgment on the overall quality of the compositions in each pair, basing their decision on ideas, organization, style, vocabulary, and sentence structure.

Since the evaluators met during the same morning in one classroom, the experimenter was able to explain the procedures and answer any questions that arose, thus satisfying Braddock's stipulation that "It seems highly desirable to have all the raters working in the same or adjoining offices, where an investigator can be present and . . . insure that everything runs smoothly" (1963, p. 11).

Table 2
Academic Degrees Held or in Progress and Prior Experience of Teacher-Evaluators

Teacher	Sex	Degree Held	Degree in Progress	Grades Taught	Years of Teaching Experience
1	M	M.Ed.	Ph.D., Eng. Ed.	7–12	16
2	F	B.S.	M.A.	10	1
3	F	B.A.	M.S.	8–11	5
4	M	Advanced M.A.		9–12	5
5	F	B.A.	M.A.	10, 12	2½
6	F	B.A.	M.S.	11	7
7	M	B.Ed.	M.Ed.	10, 12	1
8	F	Advanced M.A.		1–3, 7–12	20

Both Stalnaker (1934) and Buxton (1958) claimed that rater training helps rater reliability. Buxton suggested that graders should review together a composition they have just rated to insure a common interpretation of their criteria. Braddock (1963) remarked on the frequency with which rater training is reported in studies which report high reliabilities (p. 14). Therefore, during an initial practice period the evaluators were given two matched pairs of compositions, one pair exemplifying very good seventh grade writing and the other, the contrary. On the blackboard, from left to right, were written *ideas*, *organization*, *style*, *vocabulary*, and *sentence structure*. After each item was discussed in turn, the evaluators were asked to choose the composition they preferred, basing their judgments equally on all five factors. They were to indicate their preference by making a large check at the top of the preferred composition. Then there ensued a discussion of the relative merits of each of the paired compositions to establish some sort of general agreement concerning the five criterion factors. These five factors were left on the blackboard, and the evaluators were encouraged to glance there occasionally to ensure that they were taking all five into consideration in their judgments.

This study was interested in the students' writing ability and not at all in their spelling, punctuation, or handwriting talents. In order to eliminate the possible effects of these extraneous factors on the evaluators' judgments, the thirty pairs of compositions were typewritten so that spelling and punctuation could be corrected. The corrections were made by a secretary at the University School. While fully aware that discourse can be punctuated in different ways that could possibly affect meaning, this researcher was satisfied that no bias was introduced

because all the punctuation and spelling changes were made by one person who was never aware of the group to which a particular composition belonged. In support of this position, Braddock stated that

> Even though raters are requested to consider in their evaluations such attributes as content and organization, they may permit their impressions of the grammar and mechanics of the compositions to create a halo effect which suffuses their general reactions. (A converse emphasis, of course, can just as easily create the halo.) (1963, p. 14)

A similar halo effect was reported both by Starring (1952) and by Diedrich, French, and Carlton (1961). Braddock, in a discussion of the factors that contribute to making a good composition, argued that

> However important accurate spelling may be in the clarity and social acceptability of composition, many of the factors of good spelling do not seem to be closely involved with the factors of good composition. (1963, pp. 49–50)

Thus there was ample justification both for typing the compositions and for eliminating any spelling and punctuation errors.

It was desirable to keep the evaluators in total ignorance of the group to which a particular composition belonged. This was achieved by using a complicated coding system that the evaluators could not possibly be expected to break. Although the composition pairs were each given a different number between one and thirty and were each stapled together, no two evaluators received their thirty pairs in the same order. Great care was taken to randomize the order, and the evaluators were instructed to ignore the order and simply to judge each pair according to the five criterion factors. In addition, the evaluators were instructed to put each stapled pair on the vacant desk beside them as soon as the preferred composition had been checked. This was designed to discourage the evaluators from imagining they had discovered a patterned sequence.

To enhance the reliability of their judgments, the evaluators were encouraged to read the compositions rapidly, according to the technique reported by Noyes (1963) for the College Entrance Examination Board.

CHAPTER 4

RESULTS

Assessment of Syntactic Maturity

Before the first hypothesis could be tested it was considered desirable to find answers to two questions: (1) Was there any evidence to indicate that the randomization procedures had not succeeded in equating the groups on the criterion measures? and (2) Had statistically significant growth occurred in the syntactic maturity scores of the control and experimental groups when analyzed separately?

To answer the first question, the pre-treatment mean scores on the six factors of syntactic maturity were compared by t-tests for two independent samples assuming unequal variances as described by Dixon and Massey (1969, p. 119). The results of these analyses, shown in Table 3, indicated that there were no significant differences between the groups, substantiating the assumption of equivalence of groups as a result of randomization.

Table 3

Comparison of Pre-treatment Mean Scores on the Six Factors of Syntactic Maturity: Experimental and Control Groups

Factors	Experimental (N = 41)		Control (N = 42)			
	Mean	SD	Mean	SD	t-value	df
Words/T-Unit	9.63	1.42	9.69	1.45	—.17(NS)	81
Clauses/T-Unit	1.36	.15	1.37	.15	—.42(NS)	81
Words/Clause	7.06	.69	7.05	.74	.06(NS)	81
Noun Clauses/ 100 T-Units	13.76	8.55	13.67	7.94	.05(NS)	80
Adverb Clauses/ 100 T-Units	14.34	6.37	14.24	7.95	.07(NS)	78
Adjective Clauses/ 100 T-Units	7.90	5.42	9.29	5.41	—1.16(NS)	81

t—test for two independent samples assuming unequal variances.
NS—not significant.

Table 4
Mean Pre-Post Change Scores on the Six Factors of Syntactic Maturity: Control Group

Factors	Pre	Post	Change	SD	t-value
Words/T-Unit	9.69	9.96	.27	1.27	1.37(NS)
Clauses/T-Unit	1.37	1.41	.04	.17	1.52(NS)
Words/Clause	7.05	7.03	—.02	.76	—.20(NS)
Noun Clauses/ 100 T-Units	13.67	15.85	2.18	9.57	.30(NS)
Adverb Clauses/ 100 T-Units	14.24	15.5	1.26	9.93	.83(NS)
Adjective Clauses/ 100 T-Units	9.29	10.16	.88	7.67	.74(NS)

t = 2.021, significant at the .05 level with 40 df.
NS—not significant.

Table 5
Mean Pre-Post Change Scores on the Six Factors of Syntactic Maturity: Experimental Group

Factors	Pre	Post	Change	SD	t-value
Words/T-Unit	9.63	15.75	6.12	2.50	15.68***
Clauses/T-Unit	1.36	1.84	.48	.28	11.07***
Words/Clause	7.06	8.55	1.49	.94	10.17***
Noun Clauses/ 100 T-Units	13.76	23.55	9.80	13.5	4.64***
Adverb Clauses/ 100 T-Units	14.34	29.01	14.67	12.3	7.66***
Adjective Clauses/ 100 T-Units	7.90	31.61	23.71	14.9	10.21***

***—significant at or beyond the .001 level.

To determine whether statistically significant growth had occurred in the control and experimental groups when examined separately, mean change scores, obtained by subtracting the pre- from the post-treatment mean scores, were analyzed by t-tests for correlated measures. The results of the analyses of the control group's pre–post change scores are shown in Table 4. Although five of the six factors of syntactic maturity showed evidence of increase, this growth was not statistically significant, substantiating Hunt's assertion that syntactic maturity develops with glacial slowness and is difficult to detect from one year to the next. The control group then would appear to have experienced normal growth in syntactic maturity.

The results of the analyses of the experimental group's mean pre–post change scores, shown in Table 5, indicated that highly significant growth had taken place on all six factors of syntactic maturity. The experimental group's mean pre–post change score of 6.12 words per T-unit was approximately five times the statistically significant increase reported for Mellon's experimental group. After the treatment Mellon's experimental group wrote on the average 11.25 words per T-unit, which was, according to the data shown in Table 1, typical of the writing of the average eighth grader in Hunt's study. The present study's experimental group wrote 15.75 words per T-unit, considerably more than the 14.4 words per T-unit reported by Hunt for the average twelfth grader.

There was therefore no evidence to indicate that randomization had not succeeded. In addition, only the experimental group showed statistically significant increases on the six factors of syntactic maturity.

The next step in the analysis of data was to test the first hypothesis, that the experimental group, which was exposed to the sentence-combining practice, would score significantly higher on the six factors of syntactic maturity than the control group, which was not exposed to the sentence-combining practice.

The post-treatment mean scores for the experimental and control groups on the six factors of syntactic maturity were compared by t-tests for two independent samples assuming unequal variances. Table 6 shows the results of these comparisons. It is evident from an examination of the t-values in Table 6 that the experimental group had established a highly significant superiority, at the .001 level of confidence, over the control group on all six factors. Since Hunt (1964, 1965) and O'Donnell, et al. (1967) have demonstrated that words per T-unit is the most reliable single index of syntactic maturity, it is interesting to note that words per T-unit yielded the highest t-value of all six of the factors.

Table 6

Comparison of Post-treatment Mean Scores on the Six Factors of Syntactic Maturity: Experimental and Control Groups

	Experimental (N = 41)		Control (N = 42)			
Factors	**Mean**	**SD**	**Mean**	**SD**	**t-value**	**df**
Words/T-Unit	15.75	3.00	9.96	1.64	10.88***	62
Clauses/T-Unit	1.84	.27	1.41	.16	8.72***	64
Words/Clause	8.55	1.02	7.03	.75	7.72***	73
Noun Clauses/ 100 T-Units	23.55	11.93	15.85	8.2	3.42***	71
Adverb Clauses/ 100 T-Units	29.01	11.15	15.5	7.67	6.41***	71
Adjective Clauses/ 100 T-Units	31.61	15.21	10.16	5.86	8.44***	51

t–test for two independent samples assuming unequal variances.
***–significant at or beyond the .001 level.

Table 7

Comparison by Grade Level of the Experimental Group's Post-treatment Scores on the Six Factors of Syntactic Maturity and Hunt's Normative Data

	Hunt's Normative Data		Post-treatment Experiment Group	
Factors	**Grade 8**	**Grade 12**	**Grade 7**	**Grade Level**
Words/T-Unit	11.5	14.4	15.75	12+
Clauses/T-Unit	1.42	1.68	1.84	12+
Words/Clause	8.1	8.6	8.55	12
Noun Clauses/ 100 T-Units	16.	29.	23.55	12–
Adverb Clauses/ 100 T-Units	16.	21.	29.01	12+
Adjective Clauses/ 100 T-Units	9.	16.	31.61	12+

Hunt (1965) reported that the average eighth grader wrote 11.5 words per T-unit, 1.42 clauses per T-unit, and 8.1 words per clause (p. 56). Hunt also reported that the average eighth grader wrote 16 noun, 16 adverb, and 9 adjective clauses per 100 T-units (1965, pp. 89–91). When these figures are compared with the post-treatment scores in Table 6, it is evident that the present study's experimental group wrote well beyond the syntactic maturity level typical of eighth graders.

To obtain some idea of the magnitude of the experimental group's growth on the six factors of syntactic maturity, the scores were compared, in Table 7, with the normative data reported by Hunt (1965) for eighth and twelfth graders. Table 7 also indicates by means of plus and minus signs the approximate grade level for syntactic maturity achieved by these seventh graders. Not only were the experimental group's mean post-treatment scores significantly greater than those of the control group, they were also distinctly greater than the norms reported by Hunt for eighth graders and at least similar to, and on four occasions superior to, Hunt's norms for twelfth graders. On only one factor, noun clauses per 100 T-units, were these seventh graders' average scores below those reported for twelfth graders.

Table 8 presents further evidence to support the assertion that the experimental group achieved significantly greater growth in syntactic maturity than that achieved by the control group. This table compared the pre–post change scores of the experimental and control groups by t-tests for two independent samples assuming unequal variances. Comparison of the change scores for words per T-unit yielded the highest t-value. Comparison with the change scores reported by Mellon (1969, p. 52) should serve as a useful indicator of the extent of this growth. Mellon reported that in mean words per T-unit his control group had increased by .26 and his experimental group by 1.27. The change in words per T-unit of 6.12 reported in Table 8 for the experimental group was over twenty times greater than that achieved by the present study's and Mellon's control groups, and approximately five times greater than the change reported for Mellon's experimental group.

Given the evidence cited above and the design of this study, it was concluded that the experimental group achieved significantly more growth in syntactic maturity than did the control group.

Several secondary questions, however, remained unanswered. It was considered desirable to determine whether the magnitude of the treatment effect could be related to the student's sex or ability level or to the influence of a particular teacher.

Since an important feature of the sentence-combining treatment was a deliberate attempt to structure the teacher out of the lessons as much

Table 8

Comparison of Mean Pre-Post Difference Scores on the Six Factors of Syntactic Maturity: Experimental and Control Groups

	Experimental (N=41)		Control (N=42)			
Factors	**Mean**	**SD**	**Mean**	**SD**	**t-value**	**df**
Words/T-Unit	6.12	2.50	.27	1.27	13.40***	59
Clauses/T-Unit	.48	.28	.04	.17	8.69***	66
Words/Clause	1.49	.94	−.02	.76	8.05***	77
Noun Clauses/ 100 T-Units	9.80	13.52	2.18	9.57	2.96**	72
Adverb Clauses/ 100 T-Units	14.67	12.26	1.26	9.93	5.47***	77
Adjective Clauses/ 100 T-Units	23.71	14.87	.88	7.67	8.76***	60

t–test for two independent samples assuming unequal variances.
**–significant at or beyond the .01 level.
***–significant at or beyond the .001 level.

Table 9

Comparison of the Mean Post-treatment Scores by Teachers on the Six Factors of Syntactic Maturity: Control Group

	Teacher 1 (N=18)		Teacher 2 (N=24)			
Factors	**Mean**	**SD**	**Mean**	**SD**	**t-value**	**df**
Words/T-Unit	10.00	1.34	9.92	1.86	.17(NS)	40
Clauses/T-Unit	1.40	.14	1.42	.17	−.48(NS)	40
Words/Clause	7.14	.67	6.95	.80	.86(NS)	39
Noun Clauses/ 100 T-Units	16.31	8.55	15.5	8.09	.31(NS)	36
Adverb Clauses/ 100 T-Units	14.62	6.64	16.17	8.44	.67(NS)	40
Adjective Clauses/ 100 T-Units	9.15	5.31	10.92	6.24	.99(NS)	39

t–test for two independent samples assuming unequal variances.
Teacher 1–Barnes, Teacher 2–O'Hare.
NS–not significant.

as possible, it seemed unlikely that any comparison of the influence of the two teachers would prove to be significant. Tables 9 and 10 confirmed this. Table 9 compared the control group's mean post-treatment scores by teacher on the six factors of syntactic maturity. Table 10 did the same for the experimental group. Analyses of the post-treatment mean scores indicated no significant differences between teachers.

Table 10

Comparison of the Mean Post-Treatment Scores by Teachers on the Six Factors of Syntactic Maturity: Experimental Group

	Teacher 1 (N=24)		Teacher 2 (N=17)			
Factors	**Mean**	**SD**	**Mean**	**SD**	**t-value**	**df**
Words T-Unit	15.85	2.60	15.61	3.57	.24(NS)	28
Clauses T-Unit	1.87	.23	1.8	.33	.82(NS)	27
Words Clause	8.46	.91	8.67	1.18	−.61(NS)	29
Noun Clauses 100 T-Units	22.24	9.21	25.41	15.08	−.77(NS)	24
Adverb Clauses 100 T-Units	30.03	9.45	27.56	13.37	.66(NS)	27
Adjective Clauses 100 T-Units	35.04	15.71	26.76	13.47	1.81(NS)	37

t–test for two independent samples assuming unequal variances.
Teacher 1–Barnes.
Teacher 2–O'Hare.
NS–not significant.

While teacher influence had been predictably insignificant, it was not at all clear whether the treatment effect might depend on the sex of the students. Table 11 revealed no significant differences on control post-treatment scores between males and females, and Table 12 revealed the same result for the experimental group.

In Table 13 two aspects of the experimental treatment effect were considered: (1) Was there a relation between the experimental treatment effect as measured by pre–post change scores and IQ? (2) What was the correlation between post- and pre-test, post-test and IQ scores, and the combination of pre-test score and IQ versus post-test score?

1. Table 13 indicated a significant positive correlation, at the .01 level of significance, between pre–post change scores and IQ for words

Table 11
Comparison of the Mean Post-treatment Scores by Sex on the Six Factors of Syntactic Maturity: Control Group

Factors	Male (N=21) Mean	Male (N=21) SD	Female (N=21) Mean	Female (N=21) SD	t-value	df
Words/T-Unit	9.83	1.27	10.08	1.97	−.48(NS)	34
Clauses/T-Unit	1.39	.13	1.44	.18	−.97(NS)	37
Words/Clause	7.08	.67	6.98	.83	.41(NS)	38
Noun Clauses/ 100 T-Units	13.98	7.21	17.71	8.86	−1.5(NS)	38
Adverb Clauses/ 100 T-Units	15.29	7.41	15.71	8.11	−.18(NS)	40
Adjective Clauses/ 100 T-Units	9.75	5.21	10.57	6.55	−.45(NS)	38

t–test for two independent samples assuming unequal variances.
NS–not significant.

Table 12
Comparison of the Mean Post-treatment Scores by Sex on the Six Factors of Syntactic Maturity: Experimental Group

Factors	Male (N=22) Mean	Male (N=22) SD	Female (N=19) Mean	Female (N=19) SD	t-value	df
Words/T-Unit	15.02	2.97	16.60	2.89	−1.72(NS)	38
Clauses/T-Unit	1.79	.30	1.90	.23	−1.26(NS)	38
Words/Clause	8.38	.80	8.75	1.22	−1.13(NS)	30
Noun Clauses/ 100 T-Units	21.43	12.11	26.01	11.53	−1.24(NS)	39
Adverb Clauses/ 100 T-Units	27.71	12.26	30.51	9.82	−.81(NS)	39
Adjective Clauses/ 100 T-Units	30.16	17.90	33.29	11.62	−.67(NS)	36

t–test for two independent samples assuming unequal variances.
NS–not significant.

per T-unit. The correlation was significant at the .05 level for clauses per T-unit and adverb clauses per 100 T-units. This indicated that pupils with a high IQ tended to have a larger pre–post change score than students with a low IQ on the three variables mentioned.

Table 13
Correlations Between Pre- and Post-test Scores and IQ on the Six Factors of Syntactic Maturity for the Experimental Group (N=41)

	Correlations Between			
		Post-test and		Pre-Post
Factors	Pre-test	Pre-test and IQ†	IQ	Change and IQ
Words/T-Unit	.562**	.707**	.595**	.522**
Clauses/T-Unit	.227	.458**	.435**	.325*
Words/Clause	.459**	.543**	.411**	.234
Noun Clauses/ 100 T-Units	.160	.278	.251	.112
Adverb Clauses/ 100 T-Units	.103	.359	.343*	.318*
Adjective Clauses/ 100 T-Units	.240	.369	.333*	.245

†–this is a multiple correlation.
*–significant at the .05 level.
**–significant at the .01 level.

2. Table 13 also presented the correlations between the post-test, pre-test, and IQ scores, and the multiple correlation, R, between the post-test scores and the pre-test and IQ scores. The multiple correlation was significant at the .01 level for the first three variables. The correlations for the fourth, fifth, and sixth variables tended to be not significant, indicating large fluctuations in these variables. Therefore the post-test scores on words per T-unit, clauses per T-unit, and words per clause can be predicted from the pre-test score and IQ with multiple correlations of .71, .46, and .54 respectively.

Table 14 can be used to predict post-test scores from pre-test scores and IQ. The standard errors in the table indicate the accuracy of any single prediction.

Table 14
Multiple Regression of Post-test Score on IQ and Pre-test Score on the Six Factors of Syntactic Maturity: Experimental Group (N=41)

Factors	A	B_1	B_2	s	R
Words/T-Unit	−4.15	.104 (.028)	.862 (.259)	2.18	.707**
Clauses/T-Unit	.52	.0084 (.003)	.279 (.277)	.25	.458**
Words/Clause	2.06	.023 (.011)	.547 (.210)	.88	.543**
Noun Clauses/ 100 T-Units	−2.04	.208 (.143)	.168 (.221)	11.8	.278
Adverb Clauses/ 100 T-Units	−6.19	.291 (.128)	.187 (.265)	10.7	.359
Adjective Clauses/ 100 T-Units	−9.39	.334 (.180)	.460 (.439)	14.5	.369

$Y = A + B_1X_1 + B_2X_2$ where A = intercept
Y = predicted post-test score
X_1 = IQ
X_2 = pre-test score
B_1 = regression coefficient for IQ
B_2 = regression coefficient for pre-test score.
Numbers in parentheses are standard errors of regression coefficients.
R—multiple correlation coefficient.
s—standard errors of estimate.
**—significant at the .01 level.

Assessment of Writing Quality

The next step in the analysis of data was to test the second hypothesis: that the experimental group's compositions would be judged by eight experienced English teachers as significantly superior in overall quality to the compositions written by the control group.

Experimental Versus Control Compositions. To test this hypothesis, fifteen narrative and fifteen descriptive compositions were selected from both the control and experimental groups and paired by sex and level of IQ as described in greater detail in Chapter Three. Eight experienced English teachers were each given the thirty composition

pairs and instructed to indicate which composition in a pair was better in overall quality, according to the five criterion factors.

Assuming no difference between the paired compositions, the probability was .5 that a teacher would pick a composition written by one of the experimental group. Thus $P_i - .5$ indicated the difference between the observed proportion of experimental compositions picked by teacher *i* and the expected proportion. These proportions were tested by the χ^2 test. The calculations are summarized in Table 15.

The χ^2 for Teacher 1 in Table 15 was calculated in the following manner:

$$\chi^2 = \frac{2(O_1 - E_1)^2}{E_1} = \frac{2(22 - 15)^2}{15} = 6.53$$

The total χ^2 was equal to 42.00 with 8 degrees of freedom and was significant at the .001 level. This implied that the proportion $P = 169/240 = 0.7042$ of experimental compositions selected differed significantly from what would have been expected by chance, that is, $P = 0.5$. Therefore, the experimental group can be said to have written compositions which were judged to be significantly better in overall quality than those written by the control group. Thus, the second major hypothesis was confirmed.

Table 15
Comparison Between Number of Experimental Compositions Selected and Expected

Teacher	Number of Experimental Compositions		$\chi^2 = \frac{2(O_i - E_i)^2}{E_i}$
	Selected (O_i)	Expected (E_i)	
1	22	15	6.53
2	20	15	3.33
3	24	15	10.80
4	21	15	4.80
5	21	15	4.80
6	19	15	2.13
7	21	15	4.80
8	21	15	4.80
Total	169	120	42.00

Two other questions were of interest: (1) Did the teacher-evaluators judge the narrative and descriptive compositions differently with respect to the experimental treatment? and (2) Did these teacher-evaluators as a group agree in their rating of these compositions?

Narrative Versus Descriptive Compositions. Tables 16 and 17 illustrate the actual choices made by the eight experienced teacher-evaluators on the thirty pairs of compositions that had been matched by sex and IQ. Table 16 shows the choices made on the 15 pairs of narration compositions. Table 17 shows the choices made on the 15 pairs of description compositions.

Table 16

Experimental or Control Compositions Chosen by the Eight Experienced Teachers from Fifteen Matched Pairs of Narration Compositions

Teacher-Evaluator	Composition Pair No.														
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
1	X	X	O	X	O	X	X	X	X	X	X	O	X	O	X
2	X	X	O	X	O	X	X	X	X	X	X	O	X	O	X
3	X	X	O	X	O	X	X	X	X	X	X	X	X	O	X
4	X	X	O	X	O	X	X	O	X	O	X	O	X	O	X
5	X	X	O	X	O	X	X	X	X	O	X	O	X	O	X
6	O	X	O	X	O	X	X	X	X	X	X	O	X	X	X
7	X	X	O	X	O	X	X	X	X	X	X	O	X	O	X
8	X	O	X	X	O	X	X	O	X	X	X	O	X	O	X

X indicates that the teacher preferred the composition written by a member of the experimental group.
O indicates that the teacher preferred the composition written by a member of the control group.

Table 17

Experimental or Control Compositions Chosen by the Eight Experienced Teachers from Fifteen Matched Pairs of Description Compositions

Teacher-Evaluator	Composition Pair No.														
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
1	X	O	X	O	X	X	X	X	X	X	X	O	X	O	X
2	X	O	O	O	X	X	O	X	X	X	X	O	X	O	X
3	X	O	X	O	X	X	X	X	X	X	X	O	X	O	X
4	X	X	X	O	X	X	X	O	X	X	X	X	X	O	X
5	X	O	X	O	X	X	X	X	X	X	X	O	X	O	X
6	O	X	X	O	X	X	O	X	O	O	X	O	X	O	X
7	O	O	X	O	X	X	X	X	X	X	X	O	X	O	X
8	O	X	X	O	X	X	X	O	X	X	X	X	X	O	X

X indicates that the teacher preferred the composition written by a member of the experimental group.
O indicates that the teacher preferred the composition written by a member of the control group.

Calculations similar to those done in the comparison between experimental and control compositions were done for the narrative and descriptive compositions and led to a $\chi^2 = 25.07$ for the narrative compositions and a $\chi^2 = 20.80$ for the descriptive compositions, both of which were significant at the .01 level. Therefore, the narrative experimental compositions were significantly better than the narrative control compositions, and, similarly, the descriptive experimental compositions were significantly better than the descriptive control compositions.

The second aspect of the comparison between the narrative and descriptive compositions was whether the eight teachers selected the same proportion of experimental compositions in the narrative group as in the descriptive group. These results were summarized as follows:

	Essay Selected			
	Experimental	**Control**	**Total**	**Proportion**
Narrative	86	34	120	.7167
Descriptive	83	37	120	.6917
Total	169	71	240	
Proportion	.7042	.2958		

The proportions, .7167 for the narrative compositions and .6917 for the descriptive compositions, were compared by the χ^2 test for a 2×2 contingency table. The result was $\chi^2 = .1800$, which was not significant. Therefore, the proportion of experimental compositions selected did not differ significantly in the narrative and descriptive groups.

Agreement of Teachers. It was of interest to see how well the teachers agreed in their assessment of the composition pairs. Since there was no explicit reference to a measurement of this type except Cochran (1950), Gerald vanBelle of the Department of Statistics at Florida State University developed the following measure: Consider the proportion of times (P_j) the teachers selected the experimental composition in the jth pair. There would be perfect agreement if $P_j = 1$ or $P_j = 0$. There would be maximum disagreement if $P_j = 0.5$. Therefore, a reasonable statistic to test agreement is

$$\chi^2 = 2\frac{\sum_{j=1}^{N} (mP_j - m/2)^2}{m/2}$$

where m = number of teachers
and N = number of composition pairs.

Under the null hypothesis of no agreement between teachers, this quantity has approximately a χ^2 distribution with N degrees of freedom.

For the data in this study $\chi^2 = 157.5$ with 30 degrees of freedom. Since this result was significant at the .001 level, the hypothesis of no agreement between teachers was rejected. Therefore there was substantial agreement among the eight teachers who judged the overall quality of the compositions.

Summary

Analysis of the data on the six factors of syntactic maturity indicated the following:

1. There was no evidence to indicate that the randomization procedures had not succeeded.
2. The experimental group had experienced highly significant growth, at the .001 level, on all six factors of syntactic maturity.
3. The experimental group established a highly significant superiority, at the .001 level, over the control group on all six factors.
4. The experimental group wrote well beyond the syntactic maturity level typical of eighth graders and, on five of the six factors of syntactic maturity, their scores were similar to those of twelfth graders.
5. The treatment effect could not be related to the influence of a particular teacher or to whether a student was male or female.
6. Although students with a low IQ achieved highly significant increases in syntactic maturity, those with a high IQ tended to do even better.

Analysis of the data on the overall quality of the writing sample as judged by the eight experienced English teachers indicated the following:

1. The experimental group wrote compositions that were judged to be significantly better, at the .001 level, in overall quality than those written by the control group.
2. Both the narrative and descriptive compositions were significantly better, at the .01 level, than their control counterparts.
3. The proportion of experimental compositions selected did not differ significantly in the narrative and descriptive groups.
4. There was substantial agreement between the eight teachers who judged the overall quality of the compositions.

CHAPTER 5

CONCLUSIONS AND IMPLICATIONS

The present study was designed to measure the effect of written and oral sentence-combining exercises on the free writing of a seventh grade experimental group. The experimental group was given intensive practice in combining groups of kernel statements, by addition and deletion, into single sentences which were structurally more complex than those students would normally be expected to write. In order to facilitate the sentence-combining operations a series of signals capitalizing on the students' inherent sense of grammaticality was developed. An important, perhaps crucial, dimension of these signals was that they were in no way dependent on the students' formal knowledge of a grammar, traditional or transformational. Also important was an acceptant classroom atmosphere designed to allay possible syntactic fears and to produce a student confident in his ability to manipulate sentence structure. Specifically, the present study was designed to answer two questions. In comparison with the control group who were not exposed to the sentence-combining exercises, would the experimental group in their free writing (1) write compositions that could be described as syntactically more elaborated or mature? and (2) write compositions that would be judged by eight experienced English teachers as better in overall quality?

Conclusions

As a result of the analyses of data presented in Chapter Four, it was concluded that the experimental group wrote compositions which were syntactically different from the compositions written by the control group. The experimental group wrote significantly more clauses and these clauses proved to be significantly longer. As a consequence the experimental group wrote T-units which were significantly longer than those of the control group. When compared with the normative data presented by Hunt (1965), the experimental group's compositions showed evidence of a level of syntactic maturity well beyond that typical of eighth graders and in many respects quite similar to that of twelfth graders.

When eight experienced English teachers were asked to judge the overall writing quality of thirty pairs of experimental and control compositions, sixty compositions in all, that had been matched by sex and IQ, they chose a significantly greater number of the experimental compositions. Therefore, it was concluded that the experimental group wrote compositions that were significantly better in overall quality than the control group's compositions.

Given the design features of the present study, it seems reasonable to attribute the superior performance of the experimental group to the experimental treatment. For these reasons it has been judged that sentence-combining practice that is in no way dependent on formal knowledge of a grammar has a favorable effect on the writing of seventh graders.

Implications

The present study has demonstrated that the writing behavior of seventh graders can be changed by certain written and oral language experiences and that it can be changed fairly rapidly and with relative ease. In a sense this assertion questions the belief that growth in writing ability is *necessarily* a slow and difficult process. In showing that significant qualitative and syntactic gains can be achieved in approximately eight months, the present study suggests that, at least for seventh graders, a part of the composing process is directly amenable to alteration.

In the Epilogue to his NCTE report written two years after his original study, Mellon repeatedly asserted that "the sentence-combining practice had nothing to do with the teaching of writing" (1969, p. 79). The present researcher rejects such an assertion. Both Mellon's and the present study's experimental groups practiced writing sentences. The sentence-building process involved semantic as well as syntactic considerations: How does it sound? Does it make sense? Does it include all the input information (the kernels)? All of these questions, which surely include rhetorical considerations too, were an integral part of both treatments. At least by implication, both treatments favored sentences that were syntactically more mature than those the students were accustomed to producing. Football coaches have their players practice play after play in an "a-game" setting, often with no opposition, so that they will be able to execute efficiently in an actual game. Surely the coach at practice is teaching football. Similarly, students exposed to sentence-building exercises, even in an "a-rhetorical" setting, are in a very real sense being taught writing. Both treatment groups ended up

writing sentences that were syntactically more mature. The present study's experimental group wrote compositions that were judged better in overall quality. The acceptance or rejection of Mellon's overall hypothesis depended entirely on whether his students wrote syntactically more maturely. Mellon reported that the students were generally able to complete the sentence-combining exercises. But the crucial question was whether they had developed syntactic manipulating skills that would show in their writing. Mellon's study was clearly concerned with the teaching of writing skills. It is, therefore, difficult to understand how sentence-building exercises can be defined out of the teaching of writing.

Indeed, sentence combining has both theoretical and practical attractiveness when considered as part of a composition program. Rhetoric and sentence-combining practice should be viewed not as mutually exclusive or even discrete but rather as complementary. Gleason (1962), in an article discussing the place of language study in the curriculum, argued that the choppy style and the run-on style

> are basically the same. Each chooses one device to the exclusion of all others. The style is bad, not because of any individual choice, but because of the monotonous patterning. . . . to produce a good style it would be necessary to select out of a wider stock of available devices, and to work them all into an appropriate, pleasing over-all pattern. (p. 5)

Gleason went on to ask what a student must be made aware of if he is to understand and control style.

> He must know the options. The wider his repertoire and the deeper his understanding of the peculiarities of each, the better equipped he is to write. . . . As in teaching a foreign language, the accurate, casual control of patterns comes out of specific patterned drill and conscious manipulations. (pp. 5–6)

This is precisely what sentence combining provides. It expands the practical choices, the options truly available to the inexperienced young writer *when he needs them*. Christensen (1968*a*) claimed that "Grammar maps out the possible, rhetoric narrows down the possible to the desirable or effective" (p. 572). Sentence combining helps the writer enlarge the "practical-possible" so that it can be utilized during the composing process. The young writer, who has been exposed to sentence-building practice and who is developing into what was earlier called "the student as syntactic authority" as a result of intensive experiences with the manipulation of sentence structure, should be in a better position to deal with run-on or choppy styles. Armed with an

expanded practical repertoire of syntactic choices, he would be better able to avoid "monotonous patterning" and to work his "wider stock of available devices" into "an appropriate, pleasing overall pattern" as advocated by Gleason. Clearly a desirable curricular outcome for the teacher of writing.

Although the findings of the present study relate specifically to seventh graders, there is no obvious reason for assuming that sentence-combining practice should not be used in elementary and senior high school, as well as in junior high school.

The English department at Florida High School spent a good deal of time planning the seventh grade language arts program for the control group. (Remember that the experimental group was exposed to shortened versions of each of the control group's units.) And yet, despite the sophistication of the control group's program, with its small classes, well-qualified, experienced teachers, an abundance of free reading, carefully planned instruction in composition, and a relaxed atmosphere in which student talk and classroom interaction were encouraged, the control group showed only "normal" growth—.27 words per T-unit—in syntactic maturity, very similar to Mellon's control group which increased by .26 words per T-unit. If the control group's program had such a negligible effect on their syntactic maturity and overall writing quality when compared to the experiences of the experimental group, it seems reasonable to advocate the use of sentence-combining practice with, at the very least, seventh graders. The case for the efficacy of sentence-combining practice becomes even more attractive when the results of research in composition are reviewed. Neither Braddock (1963) nor Meckel (1963) uncovered a single study reporting a statistically significant composition treatment effect. Since the present study did discover a significant composition treatment effect, its sentence-combining system, which enables students to build sentences and manipulate syntax with greater facility, should surely be utilized in our schools.

In elementary school, simple adjective and relative clause insertions and repeated subject and verb deletions could be practiced orally in, perhaps, second grade. Written exercises could start in third or fourth grade. The present study's sentence-combining signal system can easily be expanded to incorporate a wider range of syntactic structures which could be practiced in junior and senior high school.

Students exposed to sentence-building techniques could use these syntactic manipulative skills at the prewriting or rewriting stage in their work in composition. They would be better able to "unchop" the choppy sentence and eliminate the run-on sentence. One can readily

envisage individual or classwide work on improving sentences or even paragraphs in a rhetorically oriented setting. Students could practice rewriting whole paragraphs, given either in kernel form or in a choppy or overly elaborate style. Experienced in sentence manipulation and trained to think in rhetorical terms, they would be in a better position to make meaningful rhetorical choices because they would have a wider repertoire of syntactic alternatives from which to choose.

The present researcher certainly agrees with Mellon's statement that sentence-combining exercises could be regarded as "a valuable addition to the arsenal of language-developing activities Moffett (1968) includes in his language arts program" (1969, p. 80). Whether these activities are "naturalistic" or "non-naturalistic" is, perhaps, irrelevant. The crucial questions are (1) Would they work? and (2) Would students enjoy them? A skillful teacher should be able to ensure that both questions are answered in the affirmative.

Practice with intensive sentence-manipulation exercises need not be restricted to the lower grades. Hunt's data, shown in Table 1 (p. 22), indicate a wide gap between the syntactic maturity level of twelfth graders and that of superior adults. Indeed, *The Christensen Rhetoric Program* (1968*b*), although heavily dependent on the students' prior knowledge of grammatical terminology, does teach sentence-building operations in order to improve college freshmen's writing ability.

Although Christensen agreed with Mellon that a mature style can be taught, he strenuously disagreed with what he called Mellon's conception of good style. He criticized Mellon for concentrating on relativization and, especially, nominalization, and also suggested that "we shouldn't teach subordination as it is hard to read" (1968*a*, p. 576). Christensen based this argument on an examination he made of modern professional and semiprofessional writers. These writers, Christensen claimed, wrote what he called "cumulative sentences," which feature a high proportion of final free modifiers and are indicative of a mature style. However, another researcher, Johnson (1969), after analyzing the prose of a different group of professional writers—a very prestigious collection indeed—and comparing them with Christensen's "best" writer, Halberstam, concluded that

> If we are to measure the degree of skill in a writer by the percentage of words he has in free modification, we should rate Cather, Fitzgerald, Forster, Isherwood, Baldwin, Auden and Orwell as less skillful than Halberstam. (p. 163)

Johnson also suggested that "students had best devote far more time to mastering subordination than Christensen would have them do" (p.

161). She noted that Edmund Wilson's style is one that is not cumulative but periodic and that Wilson

> depends for modifications, not on verbal clauses, appositives and absolutes so much as on relative and subordinate clauses. . . . (p. 162)

It is obvious from the evidence advanced, both by Christensen and Johnson, that we are a long way from defining satisfactorily a mature style or styles. Relativization and nominalization, final, medial, and initial free modifiers, short base clauses, all would appear to have their place in any definition of what constitutes a mature style.

What is bad about any style is its obviousness. Repeated cumulative sentences draw attention to themselves; their lack of variety only has unfortunate stylistic consequences. Therefore it would surely be a mistake to favor any one particular syntactic pattern to the exclusion of other possible patterns. Syntactic manipulative exercises should exploit the entire range of syntactic alternatives allowed by the grammar of English. What the young writer needs is as much practice as possible on every conceivable combination of syntactic operations.

In *Notes Toward a New Rhetoric* (1967) Christensen raised an interesting point that may help to explain something that the present researcher noticed in an entirely subjective examination of the post-treatment compositions. Christensen claimed that "solving the problem of *how to say* helps solve the problem of *what to say* . . ." (p. 5). Does this mean that form can, in some sense, generate content? It was evident to this researcher that the post-treatment compositions written by the experimental group had much more detail, more "meat" to them. The treatment group seemed to "see" more clearly. They had more to say. Perhaps the syntactic manipulative skill the students had developed, because it entailed a wider practical set of syntactic alternatives, *invited* or *attracted* detail. Perhaps knowing *how* does help to create *what*.

An alternative explanation seems plausible. Since the experimental group had become more skillful manipulators of syntax, perhaps their fear of syntax had dissipated. Confidence is very likely a self-generating process, feeding on itself. Released from syntactic roadblocks, confident, seeing a wider range of choices, the student's mind could grapple, at ease, with additional syntactic-semantic considerations. It is of interest to note that although the sentence-combining exercises did not include practice with adverb clauses, the experimental group produced a significantly greater number of adverb clauses in their free writing. The "confidence" factor has a theoretical attractiveness that invites further study. An important dimension of the present study was

the systematic attempt to build student confidence by accentuating the positive. Perhaps grammar study and too much concern with error build barriers between the beginning writer and the composing process. Sentence combining concentrates on student success. It not only has students write, it shows them *how*.

Since this researcher is advocating work with cumulative sentences as well as with sentences similar to those in the present study, it might be of interest to illustrate how readily adaptable the present study's sentence-combining signals are to Christensen's system or similar programs. In an article describing and evaluating the latest developments in rhetorical theory, McCrimmon (1968, p. 128) cited his favorite example of a cumulative sentence, written by one of Christensen's students. Reduced close to basic kernel form, with sentence-combining signals added, it would look like this:

A girl develops from the sheet of walk.
The girl is *small*.
The girl is a *Negro*.
The walk is *glare-frosted*.
The girl is *walking barefooted*.(,)
Her bare legs are *striking* the cement.(,)
Her legs are *recoiling from the cement*. (AND)
The cement is *hot*.
Her feet are *curling in*.(,)
Only the outer edges of her feet are
touching the hot cement.(,)

Note that the only additional signals that had to be developed are (AND) and (,). The (AND) simply means insert an *and* where appropriate on that line. Perhaps the comma signal (,) is not really necessary. Remember that underlined (italicized) words are retained and the remainder of the sentence deleted. The final sentence is rather easy to produce:

A small Negro girl develops from the sheet of glare-frosted walk, walking barefooted, her bare legs striking and recoiling from the hot cement, her feet curling in, only the outer edges touching.

Similarly, the following example from Sinclair Lewis can be readily handled by the development of two additional signals, (~~HE~~) and (A). HE with the cross through it means delete *he*. And (A) means supply *a*. The present researcher is indebted to Brown (1970, p. 44) for the reduction of Lewis's sentence to near kernel form. The signals, of course, have been supplied:

He dipped his hands in the bichloride solution.
He shook them. (AND ~~HE~~)

The *shake* was *quick*. (, A)
His *fingers* were *down*. (.)
His fingers were *like the fingers*
of a pianist above the keys. (.)

Insertion of each sentence into the top sentence according to the present study's signal system would result in the following sentence:

> He dipped his hands in the bichloride solution and shook them, a , quick shake, fingers down, like the fingers of a pianist above the keys. (Brown, 1970, p. 42)

Style has been conceived of in many ways, at times it is all-embracing, at others very narrow. Christensen (1968*a*) called it "syntax as style" (p. 572). Milic (1967) defined it as

> [the individual's] habitual and consistent selection from the expressive resources available in his language. . . . his style is the collection of his stylistic options. . . . Options or choices are not always exercised consciously. (p. 72)

McCrimmon (1968) cited the following all-encompassing definition of style given by Young and Becker (1965):

> A writer's style, we believe, is the characteristic route he takes through all the choices presented in both the writing and prewriting stages. It is the manifestation of his conception of the topic, modified by his audience, situation, and intention—what we call his "universe of discourse."

and made the following comment:

> Since all the choices cited here include those made in all three of the major classical stages, this definition subsumes invention and arrangement under style. (p. 125)

The present researcher is interested in the implications for the *teaching* of composition of considering the part of style defined above by Milic and Christensen as at least as important as invention or arrangement—style, that is, in the sense of the final syntactic choices made in the process of writing. Although lexical choices are not uncommon, the final choice made by every writer is more frequently a syntactic one. The last thing a writer usually does is to put words down on paper in a particular order. Perhaps English teachers have not sufficiently realized the desirability, indeed the necessity, of helping their students acquire the ability to put words down on paper, to manipulate syntax.

The present study's findings strongly suggest that style, rather narrowly defined as the final syntactic choices habitually made from the writer's practical repertoire of syntactic alternatives, is an important dimension of what constitutes writing ability. Whether Young and

Becker (1965) were correct in asserting that style subsumes invention and arrangement obviously cannot be answered from the findings of the present study. But it is nevertheless an interesting and an important question for rhetorical theory and practice.

Most teachers of writing either ignore or neglect the importance of syntactic manipulative ability. They certainly do not give it its proper due. And they fail to do so, perhaps, because they are concentrating on another important dimension of the writing process—that of observation and experience. Composition teachers should realize that it is not enough for a young writer to have something to say. Finally, he must be able to express it, to manipulate sentence structures in order to recapture the experience for his reader. An examination of the sentence about the small Negro girl, a sentence with all the hallmarks of a professional writer, and also of how that sentence *might* have been written should make this point clearer. Here is the "professional" example again:

> A small Negro girl develops from the sheet of glare-frosted walk, walking barefooted, her bare legs striking and recoiling from the hot cement, her feet curling in, only the outer edges touching.

After due consideration has been given to the importance of the writer's observation and experience, to the concreteness of the meticulously sequenced images, to the viewer's eye movement, all of these can be reflected in a series of sentences which are, perhaps, typical of the writing of a rather observant high school student, not that of a professional writer:

> A small Negro girl develops from the sheet of walk which is glare-frosted. She is walking barefooted. Her bare legs strike the hot cement and then they recoil from it. Her feet curl in so that only the outer edges are touching the hot cement.

In terms of observation and experience the "professional" example is no different from that of the hypothetical high school student. Both examples recreate the writer's visual experience. They carry the same experiential and observational load. The only difference between them is in the writers' handling of the syntax. It is true, of course, that the "professional" writer was able to recreate the rhythmic quality of the scene by blending syntax and image. Although there is no necessary connection between the observational experience, the ordered sequence of concrete images, and the manipulative syntactic skill of the writer their brilliant fusion, their complementary confluence, made the difference. In the last analysis, however, the "professional" writer was able to accomplish this only through his ability to manipulate sentence struc-

ture. Teachers of writing surely ought to spend more time teaching students to be better manipulators of syntax. Intensive experience with sentence combining should help to enlarge a young writer's repertoire of syntactic alternatives and to supply him with practical options during the writing process.

The attractiveness of the sentence-combining signals in the present study lies in their simplicity, their consistency, their flexibility, and their practicality. The previous examples illustrate how simple it is both to learn to use the signals and to expand and adapt them. The elimination of the study of transformational grammar and of transformational nomenclature makes all of this possible. With the threat of grammatical failure removed, the developing writer can get on with solving sentence-structure problems and confidently face the real issue—that of blending form and idea in any given rhetorical situation.

One final comment: Although this researcher has rather strenuously urged that more attention be paid to the syntactic manipulative skill and for a more important place for "style as syntax" in the curriculum, he is merely suggesting a possible new emphasis in rhetorical instruction and is in no sense denying or even questioning the importance of the other members of the classical rhetorician's tripod, invention and arrangement. In the last analysis the question as to which of these comes first, which is more important, becomes totally irrelevant. In their essential inseparability, they are more than a tripod. Invention, arrangement and style are a trinity, one and indivisible.

Additional Suggestions for Further Research

1. It would be desirable to extend the treatment over a number of years with a population more representative of the range of ability and socioeconomic background to be found, for example, in a very large metropolitan area or in a rurally deprived area. The low ability students did very well in the present study. Would ghetto children do as well?
2. Are the growth rates attained sustainable?
3. The students seemed to enjoy the sentence-combining treatment in this study. Can interest be maintained over a number of years?
4. Can students "overlearn" sentence-combining techniques? Can they overconsolidate? Is there a ceiling on the structures they can learn? Will they be able to handle a wider variety of syntactic structures?
5. What is the connection, if any, between syntactic and cognitive

maturity? Is there a *necessary* connection between these two? *Can* and *should* syntactic maturity run ahead of cognitive maturity? Can a practical distinction be drawn between cognitive and syntactic maturity?

6. Syntactic and stylistic maturity are clearly connected. There is need for massive research into what constitutes a mature style. Hunt's (1964, 1965, 1970) and O'Donnell et al.'s (1967) normative data on syntactic maturity are based on fairly small populations. It would be useful to have, based on a larger and more representative population, normative data on the writing and speaking performance, in a variety of modes of discourse, of students from kindergarten through college.
7. Will sentence-combining practice improve reading ability?
8. Will sentence-combining practice enhance oral performance?
9. Will sentence-combining practice that involves only writing out the exercises be as successful as, or more successful than, the present study's combination of oral practice and writing practice?
10. The assessment of overall quality of the compositions by a system of forced choices of matched pairs has much to recommend it. It is economical, easy to administer, and efficient; there is no rater fatigue problem. Rating sixty compositions on a scale would have been very time consuming. This system deserves further study. No doubt it can be improved.
11. Oral and written sentence-combining practice was successful with native speakers of English. Can it be integrated into a program for teaching English as a second language?
12. One of the major problems facing teachers of a foreign language is getting students to write compositions in that language. This researcher has recently developed sentence-combining signal systems for French and Spanish and has pilot-tested them with a small number of secondary students. The results have been encouraging. This system deserves further study.

APPENDIXES

APPENDIX A

SAMPLE LESSONS AND SENTENCE-COMBINING PROBLEMS FROM THE EXPERIMENTAL GROUP'S TEXT

This appendix contains a selection of the sentence-combining problems from the first part of the experimental group's text, *Sentence-Combining*, and sample problems from eight of the more important lessons found in the second part, with instructions to the student and a sample of the cumulative problems which followed many of the lessons. Although some attempt has been made to present a representative sample of the actual progression followed in the sentence-combining lessons, there is really no substitute for a careful look at the developing, cumulative design of the student text.

In each of the examples, the A form is the sentence-combining problem confronting the student, and the B form is an acceptable student answer.

Sample Problems from the First Part of the Student Text

A. The quarterback threw the ball well yesterday. (NEG)
B. The quarterback didn't throw the ball well yesterday.

A. Lawrence Welk will turn kids on. (NEG-EVER)
B. Lawrence Welk will never turn kids on.

A. The rattler (HOW) slithered (WHERE), bit the sleeping baby (WHERE), and (HOW) disappeared.
B. The rattler quietly slithered into the tent, bit the sleeping baby on the leg, and quickly disappeared.

A. The control agents should have killed Maxwell Smart. (BY-INV)
B. Maxwell Smart should have been killed by the control agents.

A. A garbage dump is behind the restaurant. (THERE-INS)
B. There is a garbage dump behind the restaurant.

A. John was painting something on the wall. (WHAT-QUES)
B. What was John painting on the wall?

A. Someone has been copying my homework. (WHO-QUES)
B. Who has been copying my homework?

A. Some telephones are nearby. (THERE-INS + NEG + QUES)
B. Aren't there some telephones nearby?

Lesson Seven: THAT and THE FACT THAT

Julio should admit SOMETHING.
He was there.

There are three different ways to combine the two statements above into a sentence that has the same meaning: (1) Julio should admit that he was there; (2) Julio should admit he was there; and (3) Julio should admit the fact that he was there. Notice that in all three sentences the words "he was there" have been put in place of the word *SOMETHING* in the first statement. In sentence 1 the word *that* connects the given statements; in sentence 2 they are simply joined together; in sentence 3 they are joined by *the fact that*.

We are now going to practice combining statements into one sentence as was done with the three sentences above. Follow the instructions given in parentheses after the second statement. Notice that the second statement takes the place of the word *SOMETHING* in the first statement.

A. Peter noticed SOMETHING.
   There were nine golf balls in the river. (THAT)
B. Peter noticed that there were nine golf balls in the river.

A. Karen said SOMETHING.
   She wasn't going to the party. (JUST JOIN)
B. Karen said she wasn't going to the party.

A. SOMETHING should make you avoid him.
   He is an absolute nut. (THE FACT THAT)
B. The fact that he is an absolute nut should make you avoid him.

A. SOMETHING is certain.
   Human beings will survive. (THAT)
B. That human beings will survive is certain.

Lesson Eight: IT–THAT

Some of you probably wanted to write a sentence like that in the last problem in the previous section in a different way. Instead of saying, "That human beings will survive is certain," you may have preferred to say, "It is certain that human beings will survive."

In this sentence the word *It* has replaced the word *SOMETHING* and *that human beings will survive* comes after the first statement. You have simply started the sentence with *It* and then added the "that" statement later. We'll call this the (IT–THAT) instruction.

Example:

SOMETHING is true.
The world is round. (IT–THAT)
It is true that the world is round.

A. As soon as he got to the Pearly Gates, Joe told St. Peter SOMETHING had never occurred to him.
   The tires on his Jaguar might decay. (IT–THAT)
B. As soon as he got to the Pearly Gates, Joe told St. Peter it had never occurred to him that the tires on his Jaguar might decay.

A. Ever since man dragged himself out of the primeval mud and began the process of socialization, one great problem has always been SOMETHING.

He is willing to fight other men to gain power. (THAT)
B. Ever since man dragged himself out of the primeval mud and began the process of socialization, one great problem has always been that he is willing to fight other men to gain power.

A. And SOMETHING came to pass.
Cain brought an offering unto the Lord. (IT–THAT)
B. And it came to pass that Cain brought an offering unto the Lord.

A. SOMETHING made Bill believe SOMETHING.
The used car's door fell off. (THE FACT THAT)
The dealer was dishonest. (THAT)
B. The fact that the used car's door fell off made Bill believe that the dealer was dishonest.

A. SOMETHING occurred to Captain Sharp.
His men did not know SOMETHING. (IT–THAT)
They were sailing through a mined area. (THAT)
B. It occurred to Captain Sharp that his men did not know that they were sailing through a mined area.

A. SOMETHING tells the geologist SOMETHING.
The bones of fish may be found in Death Valley. (THE FACT THAT)
The region must have been under water at some time. (THAT)
B. The fact that the bones of fish may be found in Death Valley tells the geologist that the region must have been under water at some time.

Lesson Ten: WHO, WHAT, WHERE, WHEN, HOW, WHY

In previous sections you practiced combining sentences by using THAT, THE FACT THAT, and IT–THAT. In this lesson you will do something quite similar: you will combine sentences by using WHO, WHAT, WHERE, WHEN, HOW, and WHY.

Example A:

All the people wondered SOMETHING.
The music had stopped for some reason. (WHY)
All the people wondered why the music had stopped.

Notice that *for some reason* has been removed and that *why* has been inserted at the beginning of the second statement.

Example B:

SOMETHING worried the climbers.
The odd light meant something. (WHAT)
What the odd light meant worried the climbers.

Notice that *SOMETHING* has been removed and that *what* has been inserted at the beginning of the second statement.

Example C:

Most teachers have learned SOMETHING.
Students compare homework somehow. (HOW)
Most teachers have learned how students compare homework.

Notice that *somehow* has been removed and that *how* has been inserted

at the beginning of the second statement. Sentence-combining with WHO, WHERE, and WHEN would be done in similar fashion.

A. Cathy wondered SOMETHING.
The train would arrive in New York sometime. (WHEN)
B. Cathy wondered when the train would arrive in New York.

A. After the vicious murders in the downtown bank, one of the tellers gave an account of SOMETHING.
Something had happened. (WHAT)
B. After the vicious murders in the downtown bank, one of the tellers gave an account of what had happened.

A. The fish soon discovered SOMETHING.
The worm was dangling in the water for some reason. (WHY)
B. The fish soon discovered why the worm was dangling in the water.

A. Joe tried to calculate SOMETHING.
His money would buy so much food. (HOW MUCH)
B. Joe tried to calculate how much food his money would buy.

A. SOMETHING suddenly occurred to Mr. Jones.
Jim might not know SOMETHING. (IT–THAT)
Someone finds the restaurant somehow. (HOW TO)
B. It suddenly occurred to Mr. Jones that Jim might not know how to find the restaurant.

A. SOMETHING is not clear to me.
Manuel would tell you SOMETHING for some reason. (IT–WHY)
Funeral directors know SOMETHING. (THAT)
Someone solves grave problems. (HOW TO)
B. It is not clear to me why Manual would tell you that funeral directors know how to solve grave problems.

A. SOMETHING was difficult.
Jerome admitted SOMETHING. (IT–FOR–TO)
He really didn't know SOMETHING. (THAT)
The problem could be solved somehow. (HOW)
B. It was difficult for Jerome to admit that he really didn't know how the problem could be solved.

A. Because he never listens to a word the instructor is saying, SOMETHING would take hours.
Thurston learns SOMETHING. (IT–FOR–TO)
Someone puts that engine together somehow. (HOW TO)
B. Because he never listens to a word the instructor is saying, it would take hours for Thurston to learn how to put that engine together.

A. SOMETHING took real courage.
Senator Phoggbound asserted SOMETHING. (IT–FOR–TO)
He didn't care (about) SOMETHING. (THAT)
The voters thought something of him. (WHAT)
B. It took real courage for Senator Phoggbound to assert that he didn't care what the voters thought of him.

A. SOMETHING angered Miss Frump.
The girls chattered noisily. (S' + ING)
B. The girls' chattering noisily angered Miss Frump.

A. SOMETHING angered Miss Frump.
The girls chattered noisily. (S' + ~~X~~ + ING)
B. The girls' noisy chattering angered Miss Frump.

A. SOMETHING angered Miss Frump.
The girls chattered noisily. (~~X~~ + ING + OF)
B. The noisy chattering of the girls angered Miss Frump.

A. SOMETHING is a problem for lazy people.
Someone keeps in good health somehow. (HOW TO)
B. How to keep in good health is a problem for lazy people.

A. SOMETHING is not easy.
Mrs. Adams condoned SOMETHING. (IT–FOR–TO)
Her son was sent to Vietnam. ('S + ING)
B. It is not easy for Mrs. Adams to condone her son's being sent to Vietnam.

Lesson Seventeen: DISCOVER → DISCOVERY
ACCEPTED → ACCEPTANCE PRODUCE → PRODUCTION

We are going to practice sentence combinations which necessitate changes being made in certain word endings. For example, "Tom discovered the gold. ('S + DISCOVERY + OF)" would be written out as: "Tom's discovery of the gold. . . ." Similarly, "We failed. ('S + FAILURE)" would be written out as: "Our failure. . . ." Thus, if you were instructed to combine the following:

SOMETHING led to World War II.
The Allies punished Germany after World War I. (S' + PUNISHMENT + OF)

you would write it out like this:

The Allies' punishment of Germany after World War I led to World War II.

A. Because of numerous personality conflicts and sheer pettiness the Student Council made a mess of SOMETHING.
They formulated a set of rules for conduct. (S' + FORMULATION + OF)
B. Because of numerous personality conflicts and sheer pettiness, the Student Council made a mess of their formulation of a set of rules for conduct.

A. It would be impossible to ignore the fact that SOMETHING caused a great deal of controversy.
Simmons published the experiment. ('S + PUBLICATION + OF)
B. It would be impossible to ignore the fact that Simmons' publication of the experiment caused a great deal of controversy.

A. SOMETHING led to SOMETHING.
James Watt discovered SOMETHING. ('S + DISCOVERY)
Steam is a powerful source of energy. (THAT)
Britain established an industrial society. ('S + ING)
B. James Watt's discovery that steam is a powerful source of energy led to Britain's establishing an industrial society.

Lesson Nineteen: WHICH THAT, WHO, and WHOM

In this lesson we'll be practicing combining sentences with WHICH/THAT, WHO, and WHOM. For example, if you were given the following:

Some of the engines were scheduled to be scrapped this year.
The saboteurs have demolished the engines. (WHICH)

you would write it like this:

Some of the engines which the saboteurs have demolished were scheduled to be scrapped this year.

Notice that *engines*, the repeated word, was replaced by *which*. You look for the repeated word when instructed to combine sentences with WHICH/THAT, WHO, and WHOM. Then you simply eliminate and substitute for one of the repeated words.

You may be given the instruction (WHICH THAT). This simply means that you can use either *which* or *that*. You pick the one you think sounds better. Remember also that (WHICH THAT) can mean (JUST JOIN).

A. In his letter Ralph enclosed a snapshot.
He had taken a snapshot during his visit with us. (WHICH/THAT)
B. In his letter Ralph enclosed a snapshot which he had taken during his visit with us.
or: In his letter Ralph enclosed a snapshot that he had taken during his visit with us.
or: In his letter Ralph enclosed a snapshot he had taken during his visit with us.

A. Whenever our family dines at Dino's, Grandma insists on watching the chef.
The chef tosses the pizzas high into the air. (WHO)
B. Whenever our family dines at Dino's, Grandma insists on watching the chef who tosses the pizzas high into the air.

A. Although it is usually quiet during the week, the golf course is very busy on weekends.
The golf course was completed just last year. (WHICH/THAT)
B. Although it is usually quiet during the week, the golf course that (which) was completed just last year is very busy on weekends.

A. SOMETHING is illogical.
Man believes SOMETHING. (IT–FOR–TO)
Only this tiny earth possesses the conditions. (THAT)
The conditions have made life possible. (WHICH/THAT)
B. It is illogical for man to believe that only this tiny earth possesses the conditions which have made life possible.

A. As soon as they had completed their five-mile march carrying full pack, the exhausted recruits reported to the colonel.
The colonel explained a few points. (WHO)
They had not understood a few points. (WHICH THAT)
B. As soon as they had completed their five-mile march carrying full pack, the exhausted recruits reported to the colonel, who explained a few points (which, that) they had not understood.

Lesson Twenty: WHOSE, WHEN, WHERE, and WHY

We're now going to add instructions using WHOSE, WHEN, WHERE, and WHY. They are similar to the WHICH/THAT, WHO, and WHOM instructions, so you simply watch out for the repeated words and eliminate and substitute for them.

A. One day a girl strolled into the cafeteria.
The girl's dress looked like spun gold. (WHOSE)
B. One day a girl, whose dress looked like spun gold, strolled into the cafeteria.

A. After a wild chase through the busy downtown traffic, the young reporter was able to point out the apartment.
The gangster was hiding out in the apartment. (WHERE)
B. After a wild chase through the busy downtown traffic, the young reporter was able to point out the apartment where the gangster was hiding out.

A. The idea occurred to her at the moment.
At the moment she had all but given up hope. (WHEN)
B. The idea occurred to her at the moment when she had all but given up hope.

A. The place seemed to be enveloped in a glow.
Jill stood in the place. (WHERE)
A glow gleamed on her red hair. (WHICH THAT)
B. The place where Jill stood seemed to be enveloped in a glow that (which) gleamed on her red hair.

A. I get nervous every time Ben goes for a swim in the ocean because he does not believe SOMETHING.
SOMETHING is possible. (THAT)
The undertow sweeps him out into deep water. (IT–FOR–TO)
B. I get nervous every time Ben goes for a swim in the ocean because he does not believe (that) it is possible for the undertow to sweep him out into deep water.

A. SOMETHING irritated Albert.
The mechanic examined the carburetor carefully. ('S + ~~DO~~ + EXAMINATION)
Albert asked SOMETHING. (WHO)
SOMETHING would take so long. (HOW LONG)
He completes SOMETHING. (IT–FOR–TO)
He inspects the whole car. ('S + INSPECTION + OF)

B. The mechanic's careful examination of the carburetor irritated Albert, who asked how long it would take for him to complete his inspection of the whole car.

Lesson Twenty-Two: Underlining as a Combining Signal

In today's lesson we are going to practice sentence-combining by eliminating repeated words and any related part of *to be* and by inserting what remains immediately after the first appearance of the repeated words. For example,

The girl suddenly began to scream in terror.
The girl was *walking through the park.*

would be written out like this:

The girl walking through the park suddenly began to scream in terror.

Notice that *the* and *girl*, the repeated words, and *was*, a form of *to be*, were eliminated. Notice also that what was left, *walking through the park*, was placed immediately after *The girl* in the first sentence.

Remember that *am*, *is*, *are*, *was*, and *were* are forms of *to be*.

. . . The words that have to be inserted in the sentence above will be underlined.* You simply eliminate the words that aren't inserted above. For example,

The young skater almost lost her leg in a car accident last year.
The young skater was *practicing out there on the ice.*

The young skater practicing out there on the ice almost lost her leg in a car accident last year.

You can, if it helps, put crosses through *The young skater was* in your mind's eye, but you probably won't have to. Just remember to insert the underlined words immediately after the first appearance of the repeated words.

A. Miss Jones easily smeared her attacker.
Miss Jones was *a former wrestler.*
B. Miss Jones, a former wrestler, easily smeared her attacker.

A. The governor declared in his address to the legislature that the roads will be largely paid for by taxes.
The roads are *to be built this year.*
The taxes are *on gasoline and cigarettes.*
B. The governor declared in his address to the legislature that the roads to be built this year will be largely paid for by taxes on gasoline and cigarettes.

A. Jules earned the money by pumping gas until midnight seven nights a week.

* The italicized words in the sentence-combining problems found in the following lessons were underlined in the experimental students' text.

Jules is *an apprentice bricklayer.*
The money was *to pay for his hiking vacation in Europe.*

B. Jules, an apprentice bricklayer, earned the money to pay for his hiking vacation in Europe by pumping gas until midnight seven nights a week.

A. The senate committee on environmental pollution did not seem to be overly impressed by the automobile industry's claim that most cars can be equipped with luxuries.
The cars are *being sold today.*
The luxuries are *to meet anyone's needs.*

B. The senate committee on environmental pollution did not seem to be overly impressed by the automobile industry's claim that most cars being sold today can be equipped with luxuries to meet anyone's needs.

A. SOMETHING is impossible.
A chef cooks meals. (IT–FOR–TO)
The chef is *working in this small kitchen.*
The meals will satisfy all customers. (WHICH/THAT)

B. It is impossible for a chef working in this small kitchen to cook meals that (which) will satisfy all customers.

A. SOMETHING angered Mr. Mulvaney.
Miss Frickert insisted SOMETHING. ('S + ING)
There were spooks in the house. (THAT)
She had just rented the house. (WHICH/THAT)
Mr. Mulvaney is *the policeman on our block.*

B. Miss Frickert's insisting that there were spooks in the house (which, that) she had just rented angered Mr. Mulvaney, the policeman on our block.

A. SOMETHING irritated the men.
Connie constantly chattered. ('S + ~~BE~~ + ING)
The chattering kept the hunters from hearing something. (WHICH/THAT)
The dogs were running someplace. (WHERE)
The men swore SOMETHING. (WHO)
They would never take her hunting again. (THAT)

B. Connie's constant chattering, which kept the hunters from hearing where the dogs were running, irritated the men, who swore (that) they would never take her hunting again.

Lesson Twenty-Four: The Underlining Signal Continued

In the previous section you practiced inserting the underlined words immediately after the first appearance of the repeated words. In this lesson there will be single words underlined. Most of the time, you will insert these single words in front of the first appearance of the repeated words. For example,

Most Latin Americans prefer soccer to bullfighting.
The Latin Americans are *youthful.*

would be written out as:

Most youthful Latin Americans prefer soccer to bullfighting.

Notice that *the* and *Latin Americans*, the repeated words, and *was*, a form of *to be*, were eliminated. Notice also that *youthful*, which was underlined, was placed in front of *Latin Americans*. Let's look at another example.

We saw a fourteen-year-old girl selling heroin to four twelve-year-olds at school.
The girl was *cruelly undernourished*.

would be written out as,

We saw a cruelly undernourished fourteen-year-old girl selling heroin to four twelve-year-olds at school.

Put the underlined phrases where you think they fit best, before or after.

A. All the English students loved their teacher.
The students were *cool*.
The teacher was *charming*.
B. All the cool English students loved their charming teacher.

A. The cabinet official, who obviously knew nothing about economics, declared that a budget is of overwhelming importance.
The budget has been *balanced*.
B. The cabinet official, who obviously knew nothing about economics, declared that a balanced budget is of overwhelming importance.

A. The alleys were littered with bottles and garbage.
The alleys were *between the apartment buildings*.
The apartment buildings were *dismal*.
The bottles were *broken*.
The garbage was *rotting*.
B. The alleys between the dismal apartment buildings were littered with broken bottles and rotting garbage.

A. The explorers saw formations.
The formations were *glistening*.
The formations were *black*.
The formations were *rock*.
The formations were *rising hundreds of feet into the air*.
The formations were *one of Asia's greatest wonders*.
B. The explorers saw glistening black rock formations rising hundreds of feet into the air, one of Asia's greatest wonders.

A. Some teachers often hesitate to give students answers to those questions.
The teachers are *rather timid*.
The answers are *frank*.
The answers are *personal*.
The questions are *basic*.
The questions disturb us all as we try to understand our lives.
(WHICH THAT)
B. Some rather timid teachers often hesitate to give students frank, per-

sonal answers to those basic questions which (that) disturb us all as we try to understand our lives.

A. The office building towered above the apartment houses.
The building was *gleaming*.
The building was *new*.
The building was *rising high into the sky*.
The houses were *decrepit*.
The houses were *brick*.
The houses were *in the slums*.
The slums surrounded this symbol of prosperity. (WHICH/THAT)
The prosperity was *universal*.

B. The gleaming new office building, rising high into the sky, towered above the decrepit, brick apartment houses in the slums which (that) surround this symbol of universal prosperity.

A. A girl tightly held the hand of her mother.
The girl was *pale*.
The girl was *nervous*.
The girl was *about six years old*.
The girl was apparently going to school for the first time. (WHO)
Her mother was *smiling*.
Her mother calmly encouraged her. (WHO)

B. A pale, nervous girl about six years old, who was apparently going to school for the first time, tightly held the hand of her smiling mother, who calmly encouraged her.

A. The heron tensed its wings for the plunge.
The heron was *princely*.
The heron was *perched high on a ledge*.
The ledge was *rocky*.
The ledge's height enabled the bird to survey the waters. (WHOSE)
The waters were *swirling*.
The waters were *blue-white*.
The waters were below on three sides. (WHICH/THAT)
The plunge would be *spectacular*.
The plunge was *soon to be triggered by a school of fish*.
The school of fish were *fast approaching*.

B. The princely heron, perched high on a rocky ledge whose height enabled the bird to survey the swirling blue-white waters that were below on three sides, tensed its wings for the spectacular plunge soon to be triggered by a fast approaching school of fish.

A. The soldiers realized SOMETHING.
The soldiers were *weary*.
The soldiers were *battle-scarred*.
The soldiers were *in the thick of that struggle*.
The struggle was *bloody*.
The struggle was *desperate*.
The struggle was *hand-to-hand*.
The struggle took the lives of so many men. (WHICH/THAT)
The men were *fine*.

The men were *young*.
SOMETHING would be difficult. (THAT)
They would survive the mistakes of generals. (IT–FOR–TO)
The mistakes were *costly*.
The generals were *inexperienced*.
The generals relied on tactics. (WHO)
The tactics were *outmoded*.
The tactics were *military*.
The tactics simply did not fit the realities of warfare. (WHICH THAT)
The warfare was *modern*.

B. The weary battle-scarred soldiers in the thick of that bloody, desperate, hand-to-hand struggle, which took the lives of so many fine young men, realized that it would be difficult for them to survive the costly mistakes of inexperienced generals who relied on outmoded military tactics that simply did not fit the realities of modern warfare.

A. Mr. Lippman has suggested SOMETHING.
Mr. Lippman is *a noted columnist*.
The President has committed us to a war. (THAT)
The war is *in Asia*.
The war is *for an objective*.
The objective is *unattainable*.
The objective is SOMETHING.
Someone creates a government. (, THE + CREATION + OF)
The government is *secure*.
The government is *free*.
The government is *pro-American*.
The government is *accepted and supported by the people*.

B. Mr. Lippman, a noted columnist, has suggested that the President has committeed us to a war in Asia for an unattainable objective, the creation of a secure, free, pro-American government accepted and supported by the people.

A. The seventh graders could not understand SOMETHING.
The seventh graders had worked hard on their assignments. (WHO)
The assignments were *English*.
They had worked *all year*.
Their teacher had assigned two reports for some reason. (WHY)
The reports were *written*.
The reports were *per week*.
The reports were *on some novels*.
The novels were *boring*.
The novels would make SOMETHING impossible. (WHICH THAT)
They would fully enjoy their summer vacations. (IT–FOR–TO)

B. The seventh graders who had worked hard on their English assignments all year could not understand why their teacher had assigned two written reports per week on some boring novels that would make it impossible for them to fully enjoy their summer vacations.

APPENDIX B

SAMPLE LESSONS AND PROBLEMS FROM AN EXPANDED VERSION OF THE SENTENCE-COMBINING SYSTEM USED IN THIS STUDY

In this study it was suggested that the sentence-combining system could be expanded to include a larger number of the syntactic structures of English. This appendix contains a number of lessons introducing sentence-combining signals which have been added since the study was completed. The lessons were pilot-tested with several hundred high school students and their teachers. The actual lessons and sentence problems were taken from a sentence-combining text which this researcher has completed for Ginn and Company.

Please note that these lessons and sentence-combining signals were *not* used in this study.

The addition of these signals makes it possible to construct sentence-building problems encompassing most of the syntactic structures in the language. These additional signals have been included in the hope that English teachers will use this expanded sentence-combining system in their classes. An hour or two of practice is all that is needed to become fairly adept at reducing selected sentences to near-kernel form and adding the appropriate signals.

Section One: X-ing Out

Although we'll be concentrating on having you practice longer sentences than you're used to writing, we are *not* saying that all your own sentences should be long. You're going to learn not only to add but to delete, to get rid of the superfluous and, hopefully, to achieve efficiency and clarity. You'll learn to juxtapose long and short sentences to make them both more effective. A composition consisting solely of long sentences is likely to be as dull and immature as one made up exclusively of short sentences. In this book, as in life, variety is the spice.

Your first sentence-combining practice involves three simple operations. Given a series of statements, you get rid of certain words, add the appropriate commas, and add only one word: *and*. Observe how this works. Given the following three base sentences,

> The blunt nose of the Hindenburg bobbed up.
> The blunt nose hung a moment in the air.
> Then it crumpled toward the field. (AND)

you could write,

> The blunt nose of the Hindenburg bobbed up, hung a moment in the air, and then crumpled toward the field.

Three things happened:

1. "The blunt nose" and "it" were deleted.
2. Commas were added.
3. An *and* was introduced just before the last base sentence.

In the following example you'll be given signals to help you decide which words to delete and where to put commas.

~~She~~ means delete "She."
The comma signal (,) means put a comma at the beginning of this base sentence.
(,AND) means put a comma followed by an *and* at the beginning of this base sentence.

Given the following three base sentences,

Helen raised her pistol.
~~She~~ took careful aim. (,)
~~She~~ squeezed off five rapid shots to the center of the target. (, AND)

you would write them out like this:

Helen raised her pistol, took careful aim, and squeezed off five rapid shots to the center of the target.

Each of the following sets of base sentences is to be written as just one sentence. . . . In the first two problems you have been supplied with AND, X-ing out, and comma signals. In the remaining problems decide for yourself which words are to be X-ed out, where to put commas, and whether an *and* is needed.

A. The pitcher looked up intently.
~~The pitcher~~ glanced at first base. (,)
Then ~~he~~ threw a hanging curve which the batter knocked out of the stadium. (, AND)
B. The pitcher looked up intently, glanced at first base, and then threw a hanging curve which the batter knocked out of the stadium.

A. Carlos smoked their cigarettes.
~~He~~ lounged with his feet on their couch. (,)
~~He~~ occasionally took Juanita places in their car. (, AND)
B. Carlos smoked their cigarettes, lounged with his feet on their couch, and occasionally took Juanita places in their car.

A. The Hindenburg burst like a bomb.
It crashed in flames with ninety-seven persons on board.
B. The Hindenburg burst like a bomb and crashed in flames with ninety-seven persons on board.

A. When John didn't turn up for their date, Sally walked down to the bridge.
Sally climbed up on the rails.
She did a neat dive into the river.

B. When John didn't turn up for their date, Sally walked down to the bridge, climbed up on the rails, and did a neat dive into the river.

A. The Hindenburg rode out a severe storm along the Atlantic coast.
The Hindenburg glided safely through and around angry forks of lightning.
Then the Hindenburg, with a safe landing in her grasp, plummeted to the ground.
B. The Hindenburg rode out a severe storm along the Atlantic coast, glided safely through and around angry forks of lightning, and then, with a safe landing in her grasp, plummeted to the ground.

A. Fearless Fred dashed into the room.
He dived at the dastardly robber.
He missed.
He went sailing out of the five-story window.
B. Fearless Fred dashed into the room, dived at the dastardly robber, missed, and went sailing out of the five-story window.

A. They walked on.
They were looking at the stars.
They were talking about them.
They were ignoring the deserted look the cottages wore.
They were pretending not to see the cars that passed them.
B. They walked on, looking at the stars, talking about them, ignoring the deserted look the cottages wore, pretending not to see the cars that passed them.

Section Two: Making the Connection

One of the simplest ways of combining two sentences is to put them back-to-back with a connecting word between. The connecting word establishes a relationship between the two base sentences, a relationship that might be hard to establish by any other means. The relationships are mainly of (1) cause-effect, (2) time, and (3) similarity or difference. Here is an example of each kind of relationship:

1. They were happy because their team won.
2. They were happy when their team won.
3. They were happy, but we were miserable.

Sometimes you can establish a relationship without specifying which kind. The semicolon (;) is the "connection":

4. They were happy; their team won.

Some connecting words are *as soon as, just when, after, before, although, if, since*.

A brief look at the combining mechanics is all you need before plunging into the practice. When one of the connecting words appears as an instruction, attach it to the beginning of its base sentence. Then attach the result to the beginning of the following sentence or the end of the previous sentence.

A. The soldiers came home.
The war ended. (WHEN)
B. The soldiers came home when the war ended.

A. The war ended. (WHEN)
The soldiers came home.
B. When the war ended, the soldiers came home.

A. I don't get there by midnight. (IF)
Come looking for me.
I'll be in trouble. (;)
B. If I don't get there by midnight, come looking for me; I'll be in trouble.

A. He always quits.
You need him. (JUST WHEN)
B. He always quits just when you need him.

A. You overcome your fear of the water. (ONCE)
Learning to swim becomes a matter of patience and practice.
B. Once you overcome your fear of the water, learning to swim becomes a matter of patience and practice.

A. Night came. (WHEN)
We sat huddled in blankets.
The blankets were *thick* and *woolly*.
It was time to turn in for the night. (LONG BEFORE)
B. When night came, we sat huddled in thick, woolly blankets long before it was time to turn in for the night.

Section Three: (ING) and (WITH)

Some really effective sentences can be constructed by changing a word to its *-ing* form or by using *with* as a "connector." Notice how the (ING) instruction works:

A. Joe *burst through the line.* (ING)
Joe forced the quarterback to eat the ball on fourth down.
B. Bursting through the line, Joe forced the quarterback to eat the ball on fourth down.

The (ING) instruction causes *burst* to become *bursting*, and the italics are a reminder to get rid of the *Joe* in that sentence. Now try one of your own:

A. The angry crowd *fell on the assassin.* (ING)
The angry crowd tore him limb from limb.

The (WITH) instruction does one of two things, depending on the kind of sentence it follows. Look at these examples:

A. She was a sensuous looking beauty.
She had long auburn hair. (WITH)
B. She was a sensuous looking beauty with long auburn hair.

A. Her car was in a four-wheel drift. (WITH)
She counter-steered and went on to take the lead.

B. With her car in a four-wheel drift, she counter-steered and went on to take the lead.

In the first example, (WITH) "kicks out" the *had* and the *she* and settles at the beginning of the sentence. In the second example, (WITH) simply eliminates the *was* and settles at the beginning of the sentence.

A. The slave *cried out for mercy.* (ING)
The slave threw himself at the sultan's feet.
The slave had been caught in the harem. (WHO)
B. Crying out for mercy, the slave, who had been caught in the harem, threw himself at the sultan's feet.

A. It was a wild wet day.
The wind was slapping at your face. (WITH)
The wind *chilled you through and through.* (ING)
B. It was a wild wet day with the wind slapping at your face, chilling you through and through.

A. Alex was *lonely.*
Alex was *disillusioned.*
Alex was *bitter.*
Alex shuffled into the bus station.
His shoulders were *bowed.*
His suitcase was *heavy in his hand.*
B. Lonely, disillusioned, bitter, Alex shuffled into the bus station, his shoulders bowed, his suitcase heavy in his hand.

A. Robert was *dedicated.*
Robert was *honest.* (AND)
Robert was doomed to failure in a society.
The society sneered at dedication. (THAT)
The society *refused to acknowledge selfless commitment.* (ING)
Dedicated and honest, Robert was doomed to failure in a society that sneered at dedication, refusing to acknowledge selfless commitment.

A. The deer *sensed danger.* (ING)
The deer lifted its head.
Its *ears* were *stiff and straight.*
Its *body* was *tense.*
It was *ready to explode into motion at the slightest sound.*
B. Sensing danger, the deer lifted its head, ears stiff and straight, body tense, ready to explode into motion at the slightest sound.

A. You got beyond those pious utterances about his concern for the weak and oppressed. (WHEN)
You realized SOMETHING.
He was quite simply an egomaniac. (THAT)
He had no other concern but his own selfish ambition. (WITH)
B. When you got beyond those pious utterances about his concern for the weak and oppressed, you realized that he was quite simply an egomaniac with no other concern but his own selfish ambition.

A. They were *hand in hand.*
They walked on in silence.
The wind stirred the moist, warm air. (ING)
The tide swept rhythmically over their bare feet. (ING)
The sand was *cool and liquid on their toes.*

B. Hand in hand, they walked on in silence, the wind stirring the moist, warm air, the tide sweeping rhythmically over their bare feet, the sand cool and liquid on their toes.

A. Julia stood at the edge of the cliff.
She *looked down on their upturned, nickel-sized faces by the side of the tidal pool.* (ING)
She *wished she had ignored the dare.* (ING)
She *felt trapped.* (ING)
Yet she *knew SOMETHING.* (ING)
She couldn't back down. (THAT)

B. Julia stood at the edge of the cliff, looking down on their upturned, nickel-sized faces by the side of the tidal pool, wishing she had ignored the dare, feeling trapped, yet knowing that she couldn't back down.

A. The gas station attendant stumbled out of his shack.
He was *an emaciated looking fellow.*
He had white hair and skin the color of an old saddle. (WITH)
He *stood scowling at us.* (AND)
His chin was thrust forward. (WITH)
His eyes were *blazing.*

B. The gas station attendant, an emaciated looking fellow with white hair and skin the color of an old saddle, stumbled out of the shack and stood scowling at us, with his chin thrust forward, his eyes blazing.

Section Four: Colon and Dash

The colon (:) is favored by many professional writers and is a very useful writing device. For example, in *Andersonville* MacKinlay Kantor has a sentence whose bases look like this:

A. He had managed to buy also a coral necklace for his small daughter.
It was *a coral necklace naturally.* (:)
Her name was Coralie. (SINCE)

The original sentence is:

B. He had managed to buy also a coral necklace for his small daughter: a coral necklace naturally, since her name was Coralie.

Notice that the colon (:) went to the front of its base sentence and that the italics shows which part of the sentence is to be retained. Here is a sentence, broken down into bases, from John Updike's story, "Who Made Yellow Roses Yellow?":

A. He pushed back the chair a few feet.
A full view of himself was available in the tilted mirror. (SO)

He was *a tall, narrow-skulled, smooth-cheeked youth.* (:)
The youth was *tightly dressed in darkest gray.*

And here is Updike's original sentence, "reconstituted" by following the various instructions:

B. He pushed back the chair a few feet, so a full view of himself was available in the tilted mirror: a tall, narrow-skulled, smooth-cheeked youth, tightly dressed in darkest gray.

Notice, again, that the colon (:) went to the front of its base sentence.

Updike also makes effective use of the dash (—). In the same story he wrote a sentence that looks like this when broken down into base sentences:

A. It's a terrific image.
The image is of *this perceptive man.* (—)
The man is *caged in his own weak character.*

"Reconstituted," the sentence looks like this:

B. It's a terrific image—this perceptive man caged in his own weak character.

Notice that the dash (—) went to the front of its base sentence.

Writers often use two dashes to separate what they insert into a sentence from the rest of that sentence. The first dash will go at the front of its base sentence. The second dash is often written immediately after its base sentence; the instruction for this will be three dots and a dash (. . . —). The three dots are telling you first to write in the base sentence (changing it according to any other instructions) and then to put in the dash. Here's an example from Updike:

A. George read into each irregular incident possible financial loss.
The incident could be *a greeting on the subway.* (—)
The incident could be *an unscheduled knock on the door.* (. . . —)

Updike's original looks like this:

B. George read into each irregular incident—a greeting on the subway, an unscheduled knock on the door—possible financial loss.

Now try combining sentences using the colon and dash instructions. All the sentences in this practice have been taken from the works of modern writers. Remember that (WHICH) and (THAT) can and often do mean (JOIN).

A. And we have SOMETHING.
They sorely need something. (WHAT)
They need *a new sense of life's possibilities.* (:)
(James Baldwin)

B. And we have what they sorely need: a new sense of life's possibilities.

A. Different as they were.
They were different *in background.* (—)
They were different *in personality.*
They were different *in underlying aspiration.* (. . . —)

These two great soldiers had much in common.
(Bruce Catton)

B. Different as they were—in background, in personality, in underlying aspiration—these two great soldiers had much in common.

A. I had never seen a man beaten.
He had been beaten. (AS)
He was *this mountain of a man.* (—)
He had died in the battle. (WHO)
He had been fighting the battle for forty-six years. (WHICH)
(Jesse Stuart)

B. I had never seen a man beaten as he had been beaten—this mountain of a man, who had died in the battle which he had been fighting for forty-six years.

A. The crimes have changed in rapid succession.
The Jews have been charged with the crimes in the course of history. (WHICH)
They were *crimes.* (—)
The crimes were to justify the atrocities. (WHICH)
The atrocities were *perpetrated against them.* (. . . —)
(Albert Einstein)

B. The crimes which the Jews have been charged with in the course of history—crimes which were to justify the atrocities perpetrated against them—have changed in rapid succession.

A. She studied him.
She answered. (BEFORE)
He was *tall.* (:)
He was *not too big or heavy.*
He was *black.* (AND)
(Shirley Ann Grau)

B She studied him before she answered: tall, not too big or heavy, and black.

A. Open and peaceful competition is something else again.
The competition is *for prestige.* (—)
The competition is *for markets.*
The competition is *for scientific achievement.*
The competition is *even for men's minds.* (. . . —)
(John F. Kennedy)

B. Open and peaceful competition—for prestige, for markets, for scientific achievements, even for men's minds—is something else again.

A. Never shall I forget the deep singing of the men at the drum.
The singing of the men at the drum was *swelling and sinking.*
It was *the deepest sound I have ever heard in all my life.*
It was *deeper than thunder.*
It was *deeper than the sound of the Pacific Ocean.*
It was *deeper than the roar of a deep waterfall.*
It was *the wonderful deep sound of man.* (:)
Man was *calling to the unspeakable depths.*
(D. H. Lawrence)

B. Never shall I forget the deep singing of the men at the drum, swelling and sinking, the deepest sound I have heard in all my life, deeper than thunder, deeper than the sound of the Pacific Ocean, deeper than the roar of a deep waterfall: the wonderful deep sound of man calling to the unspeakable depths.

APPENDIX C

COMPOSITION EVALUATION ASSIGNMENTS

Assignment A-1

We all enjoy an unusual story, especially the kind which holds our interest and makes us wonder what will happen next. Below are listed four titles. Choose the one which seems most interesting to you, and write a story that fits the title and is mysterious or strange. Use your imagination to fill in the details, and make sure you tell the complete story, from beginning to end. Try to make it sound as if it really happened.

Stranded in a Ghost Town
The Thing that Wouldn't Die
No Ordinary Forest!
The Strangest Day Ever

Instructions. Plan your story so that it is as clear as possible. Use the back of this paper to jot down and organize your ideas. Then write your story on the *lined paper*. You will probably have written from seven to fifteen sentences by the time you finish. You have until the end of the period to complete the story.

Assignment B-1

Unusual stories are enjoyable. We all like stories which hold our attention and make us wonder what is coming next. Choose *one* title from the four listed below, the one which is most interesting to you. Now write a mysterious or strange story which fits that title. Fill in the details from your own imagination, and be sure to tell the whole story, from start to finish. Try to make it sound as if it really happened.

Creature From the Lake
The Old Woman in the Fog
What an Unusual Day!
Lost on Evil Island

Instructions: Plan your story so that it is as clear as possible. Use the back of this paper to jot down and organize your ideas. Then write your story on the *lined paper*. You will probably have written from seven to fifteen sentences by the time you finish. You have until the end of the period to complete the story.

Assignment A-2

All of us like to remember the special places we've visited and the exciting

things we've done. In order to help our friends share these experiences, we should try to tell them things that will help them make a mental picture of the scene: the colors, the motions, the sounds, the smells, and the feelings which made the experience mean so much to us. Choose *one* of the four topics listed below. Use your imagination and your writing skill to create a lifelike word picture of such a scene, and the impressions it made on you. Concentrate on describing the sights, sounds, and smells, rather than merely telling what happened.

The Dinner Table at Thanksgiving
A Rainy Night at the Football Game
Watching a Building Burn Down
The Amusement Park at Night

Instructions. Plan your story so that it is as clear as possible. Use the back of this paper to jot down and organize your ideas. Then write your story on the *lined paper.* You will probably have written from seven to fifteen sentences by the time you finish. You have until the end of the period to complete the story.

Assignment B-2

All of us like to remember the special places we've visited and the exciting things we've done. In order to help our friends share these experiences, we should try to tell them things that will help them make a mental picture of the scene: the colors, the motions, the sounds, the smells, and the feelings which made the experience mean so much to us. Choose *one* of the four topics listed below. Use your imagination and your writing skill to create a lifelike word picture of such a scene, and the impressions it made on you. Concentrate on describing the sights, sounds, and smells, rather than merely telling what happened.

An Afternoon at a Fair in Autumn
A Cook-Out at the Shore
After a Bad Storm
Halloween Night

Instructions. Plan your story so that it is as clear as possible. Use the back of this paper to jot down and organize your ideas. Then write your story on the *lined paper.* You will probably have written from seven to fifteen sentences by the time you finish. You have until the end of the period to complete the story.

Assignment A-3

Whenever we feel strongly about something, we often try to persuade others to think as we do or to do what we want them to do. We usually try to think of as many good reasons as possible to persuade them to do it. It's also a good idea for us to show that the reasons against doing it are not as convincing. Now choose one of the situations listed below, and write a composition in which you try to persuade the person named to do what you want him to do.

A lady in your neighborhood is not sure if she should have you babysit. Convince her that you can do the job.

Persuade your parents to raise your allowance by a certain amount.

Convince your parents that you should be allowed to go to the high school dance.

Assignment B-3

Whenever we feel strongly about something, we often try to persuade others to think as we do or to do what we want them to do. We usually try to think of as many good reasons as possible to persuade them to do it. It's also a good idea for us to show that the reasons against doing it are not as convincing. Now choose one of the situations listed below, and write a composition in which you try to persuade the person named to do what you want him to do.

Imagine your parents have won a competition, and the prize is a two week vacation, all expenses paid. Persuade them to go to the place of your choice.

Persuade a teacher to limit homework to one night a week.

Convince your parents that you should be allowed to decide how you dress.

Assignment A-4

In Davy Crockett's time transportation was a very important part of people's lives. People in those days walked a great deal, but they also made use of horses, mules, coaches, canal boats and ships to carry men and goods from place to place. Imagine that a boy (or girl) your age living in those days accidentally entered the fourth dimension and landed in Tallahassee this week. Naturally he would be fascinated by the changes in the means of transportation that have taken place since the frontier days. *Write a report*, telling him of the many new means of transportation that have been invented since his day. Tell him how they work, what they can do, and so on. Try to answer any questions you think he might ask.

Assignment B-4

In Jim Bowie's time most frontier people's homes were log cabins, lit by oil lamps or candles. They had no running water and the few kitchen utensils they had were usually crude and simple. Imagine that a boy (or girl) your age living in those days accidentally entered the fourth dimension and landed in Tallahassee this week. Naturally he would be fascinated by the many changes that have taken place in homes since the frontier days. *Write a report*, telling him of the developments in the home since his day. Mention some of the many home appliances and gadgets that have been invented since Jim Bowie's time. Tell him how they work, what they can do, and so on. Try to answer any questions you think he might ask.

Assignment A-5

All of us have often been to particular places that made us feel good to be there. Sometimes, if we go back again to the same place, we have the same good feeling all over again, because of how the place looked or felt, or because of what we did or what happened to us the last time.

Choose *one* of the places listed below which makes you feel *good* when you go there. Try to describe the place (what you saw, how it made you feel, the people who were there) so that a teenage friend will understand why you feel good about the place.

Saturday afternoon at the movies
An ice cream parlor
Sunday morning at Church
A favorite quiet place
A backyard swimming pool

Assignment B-5

All of us have been to particular places that made us feel *bad* to be there. Sometimes, if we go back again to the same place, we have the same bad feeling all over again, because of what we did or what happened to us the last time.

Choose *one* of the places listed below which makes you feel *bad* when you go there. Try to describe the place (what you saw, how it made you feel, the people who were there) so that a teenage friend will understand why you feel bad about the place.

A doctor's or dentist's office
The school principal's office
A new school on the first day
A traffic jam on a hot afternoon
Your room on a cold winter morning,
when the heating system has broken down.

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SOME IMPLICATIONS FOR THE TEACHING OF WRITING

The findings suggest that the ability to manipulate sentence structures is at least as important as invention or arrangement in the teaching of writing. For the young writer, knowing *what* to say isn't enough; he has to know *how*.

The sentence-combining system used in this study has both theoretical and practical attractiveness when considered as part of a composition program because it expands the practical choices, the options available to the young writer when he needs them during the composing process. Rhetoric and sentence-combining practice should be viewed not as mutually exclusive or even discrete, but rather as complementary.

Since comparatively little time has been spent on the syntactic manipulative skill in English classes writing programs should contain an enlarged language development component in which sentence-building exercises would play an important role. These exercises would not focus on any one sentence pattern but would exploit the entire range of syntactic alternatives allowed by the grammar of English. What the young writer needs is as much practice as possible with every conceivable combination of syntactic alternative.

Students exposed to sentence-building techniques could use these syntactic manipulative skills at the prewriting or rewriting stage in their work in composition.

An important dimension of this study was a systematic attempt to nurture the young writer's confidence. Its success suggests that writing programs should concentrate on building student confidence and a positive attitude towards sentence production.